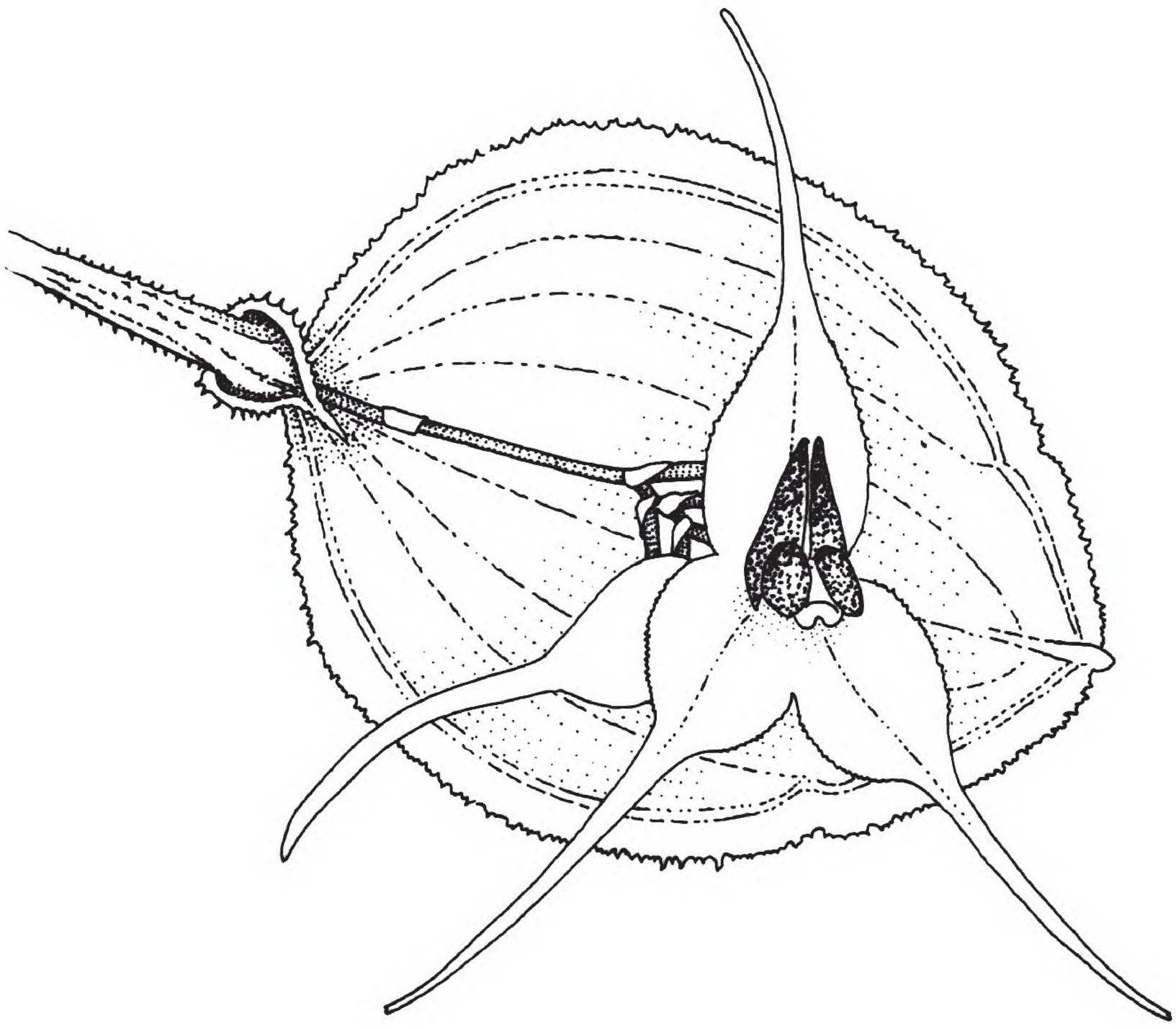
ICONES PLEUROTHALLIDINARUM
XXXII

# LEPANTHES
## OF
# COLOMBIA
## (ORCHIDACEAE)

Carlyle A. Luer and Lisa Thoerle



Missouri Botanical Garden

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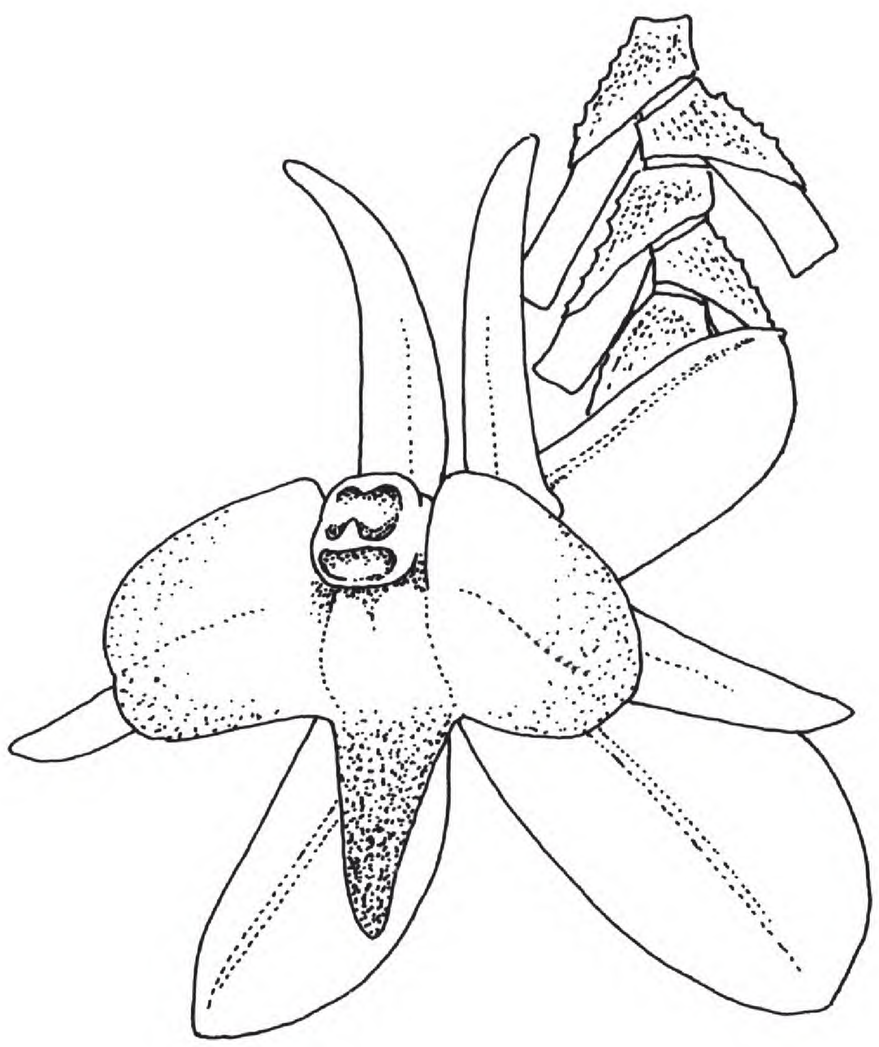

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RODRIGO ESCOBAR RESTREPO
1935-2009

Rodrigo Escobar was the fifth son of a successful mining engineer of an old, respected Colombian family in Medellín. His grandmother, Leopoldina Restrepo de Restrepo, a distant relative of the Restrepo for whom the genus *Restrepia* Kunth was named, was responsible for his early childhood love of orchids. Later, he shared an interest in orchids with his brother Gilberto. Rodrigo was editor of Orquideología, the world-renowned publication of the Medellín Orchid Society, from 1975 to 2000, during which time 28 issues were published.

About 1977, Rodrigo became associated with Colomborquídeas, the prestigious orchid nursery in the mountains above Medellín. He directed many award-winning exhibits in the annual Medellín orchid shows. He was most interested in the genera *Masdevallia* Ruiz & Pav. and *Lepanthes* Sw., for which he became the foremost authority of his time. He wanted to publish books on these genera with photographs of the Colombian species. He had a collection of a few hundred slides when he invited me to Medellín in 1977.

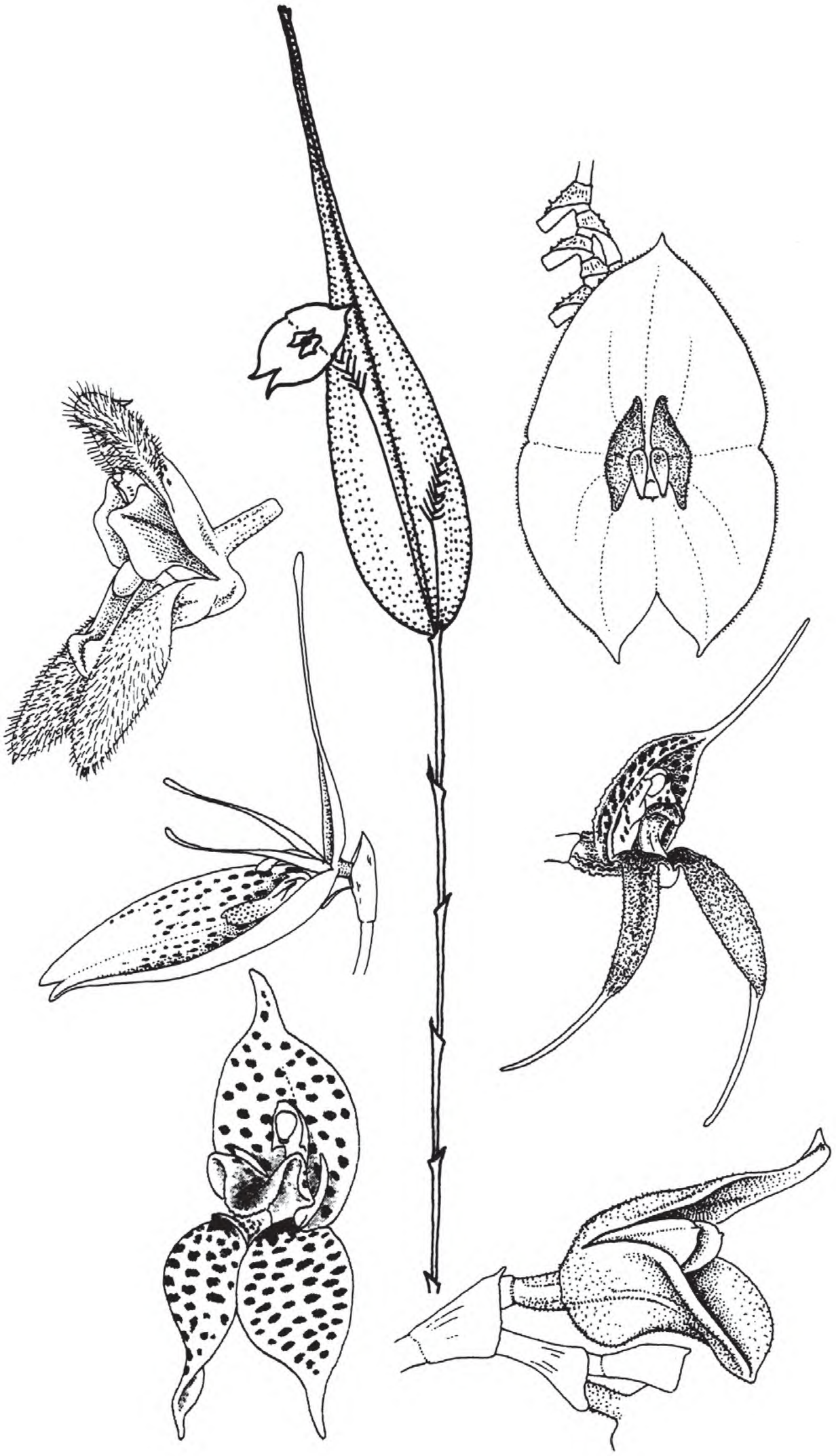
During the next 25 years we made many trips through all three cordilleras of Colombia, seeking the old species that were lost and adding new ones. One of our most memorable trips was to La Baja in the Eastern Cordillera, searching for *Masdevallia buccinator* Rchb. f. & Warsz., which was known only from two herbarium specimens collected by Louis Schlim in 1848 and 1849. Rodrigo's account can be read in the October 1983 volume of Orquideología. On the same trip, we also found *Masdevallia mastodon* Rchb. f., which had not been seen since it was first discovered. New species of *Masdevallia* were published in Orquideología, and new species of *Lepanthes* were published in Orquideología and the American Orchid Society Bulletin.

Rodrigo was editor of the six-volume series entitled Native Colombian Orchids; he was co-author of the seven-volume series Thesaurus Dracularum; and he was co-author of many new species of pleurothallids during the last 35 years. The pleurothallid genus *Rodrigoa* Braas bears his name, as well as species in the

following orchid genera: *Brachionidium* Lindl., *Chondrorhyncha* Lindl. (*Chondroscaphe* [Dressler] Senghas & G. Gerlach), *Condylago* Luer, *Dichaea* Lindl., *Dryadella* Luer, *Epidendrum* L., *Gongora* Ruiz & Pav., *Kefersteinia* Rchb. f., *Lepanthes, Macroclinium* Barb. Rodr., *Pleurothallis* R. Br. (*Acianthera* Scheidw., *Acronia* C. Presl), *Polycycnis* Rchb. f., *Porroglossum* Schltr., *Restrepia*, and *Scelochilus* Klotzsch (*Comparettia* Poepp. & Endl.). When not busy with orchids, he was a champion bridge player, a meticulous photographer, an expert in genealogy, and a connoisseur of opera and antiques.

With great pleasure, this volume is dedicated to Rodrigo Escobar.

Carlyle A. Luer



A bouquet for Rodrigo

Reading clockwise from *Lepanthes rodrigoi* Luer at top center and right: a *Rodrigoa*, *Acianthera rodrigoi* (Luer) Luer, *Dryadella rodrigoi* Luer, *Restrepia escobariana* Luer, and *Condylago rodrigoi* Luer.

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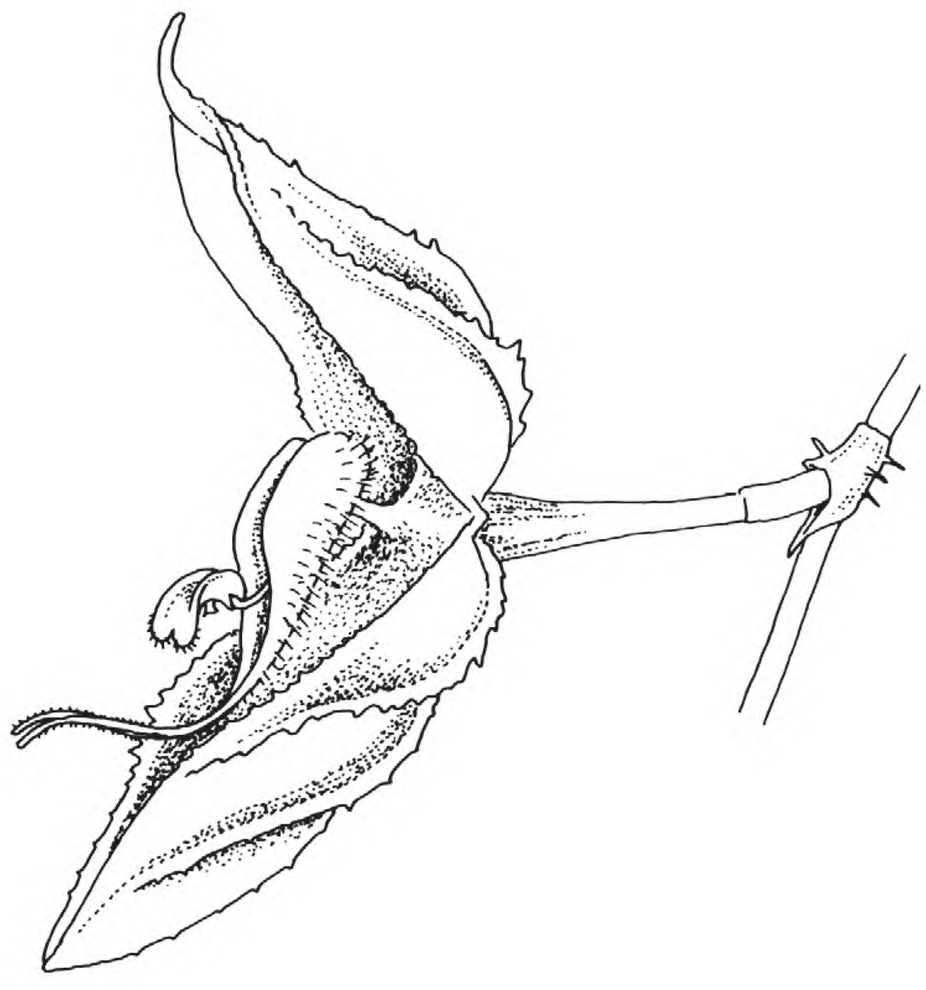


**Lepanthes quadricornis** Luer & R. Escobar, a native of southern Colombia, cultivated and photographed by Marni Turkel in Santa Rosa, California, August 2011.

# THE GENUS *LEPANTHES* IN COLOMBIA (ORCHIDACEAE)


## ABSTRACT

Following historical and morphological summaries of the genus *Lepanthes* Sw. in Colombia, 300 species from Colombia are described and illustrated. A checklist of epithets is included.

New Typifications

*Lepanthes pastoënsis Schltr.* — *Lepanthes superposita* Schltr.
*Lepanthes rhombipetala Schltr.*


*Lepanthes* Sw. is one of the largest genera in the Pleurothallidinae, with more than 700 species distributed from the Antilles and southern Mexico through the Andes into Bolivia, with only a very few species known from Brazil. The highest concentration occurs in Colombia and Ecuador. Although most species are local and endemic, some species are frequent and widely distributed. The vast majority are recent discoveries from the past several decades, having been overlooked by earlier collectors focused on gathering commercially valuable plants.

During the last decades of the eighteenth century, a Spanish expedition to the region encountered and illustrated species of *Lepanthes*. The Real Expedición Botánica al Nuevo Reino de Granada was chartered by Carlos III in 1783, with José Celestino Mutis as its leader. Mutis directed the production of thousands of illustrations and notes, including 15 species now in the genus *Lepanthes*. Unfortunately, because of repeated political upheavals, this material languished, unpublished and largely forgotten, until the middle of the twentieth century.

Reichenbach described the first two species of Colombian *Lepanthes, L. ionoptera* and *L. wageneri*, in 1855, from collections by Hermann Wagener in Norte de Santander. By the end of the nineteenth century, Reichenbach had added four more: the widely distributed *L. tracheia,* the endemic *L. carunculigera*, and two poorly understood species, *L. costata* and *L. nubicola.*

In 1920, Schlechter listed 19 species of the genus from Colombia, including 10 newly published species of his own. Of the 19, only 13 epithets remain valid in the genus *Lepanthes*, and six of these are mysterious because of scanty descriptions, often with puzzling drawings, and missing specimens. In 1922, Oakes Ames described *Lepanthes mirabilis* from a collection made by Pittier in the Pacific lowland. In 1924, Schlechter added his final three species; two names are currently accepted as valid.

More than five decades later, Rodrigo Escobar's interest in the genus kindled the present-day explosion of activity. Contemporary collectors and collections include the late Pedro Ortiz Valdivieso, S. J., who included the genus in his investigations of the Colombian flora, and Colomborquídeas, the Posada family's renowned nursery in the mountains above Medellín, which contains a remarkable collection of living material.

This volume contains descriptions of 300 species. It is not complete, but can serve as a basis for future investigations.

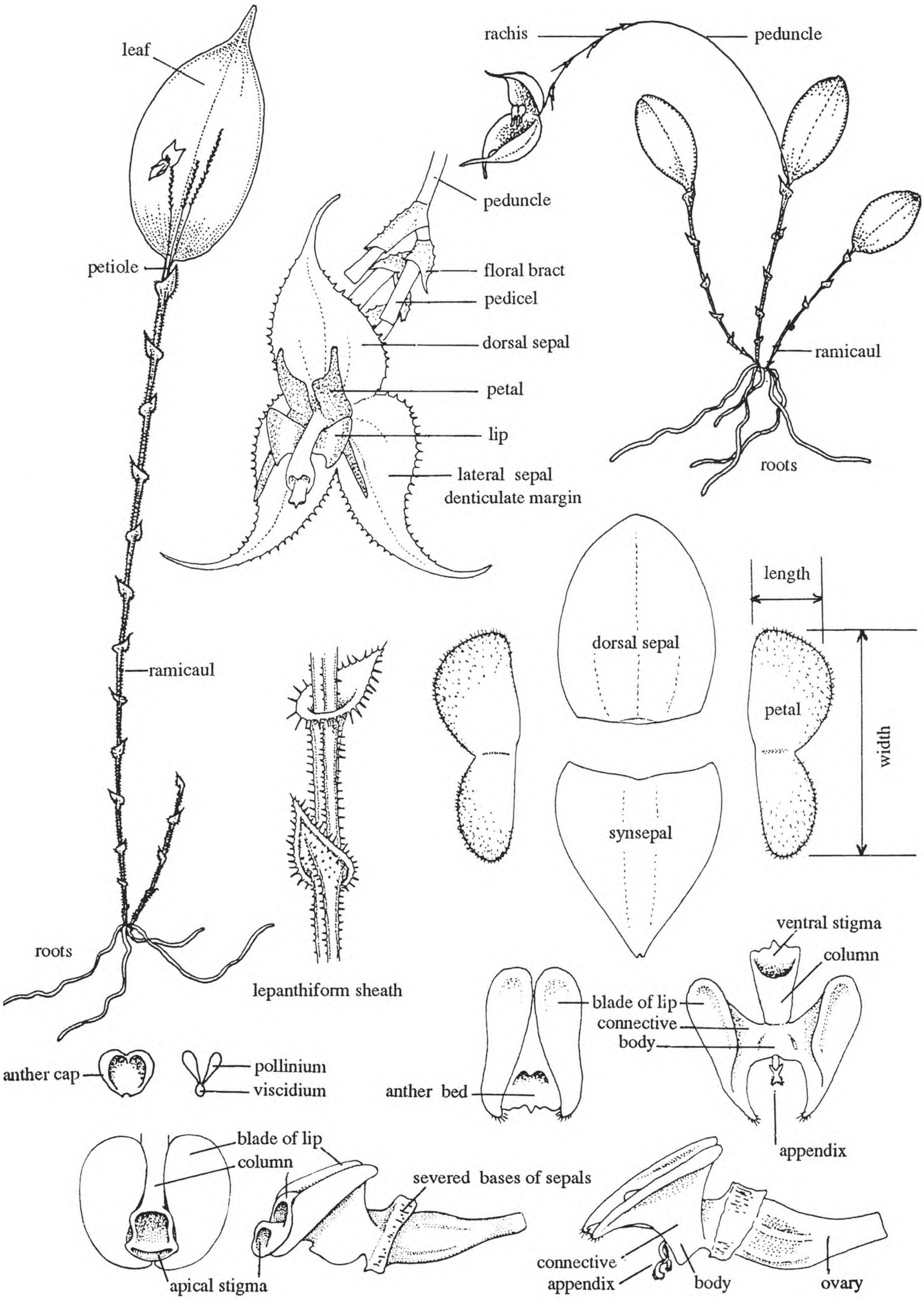



Fig. 1. Morphology of *Lepanthes*

## Morphology

All members of the Pleurothallidinae are distinguished by stems (ramicauls) without pseudobulbs. When Olaf Swartz proposed the genus *Lepanthes* in 1799, he included four species with ramicauls clad in tubular, ribbed sheaths with more or less dilated ostia, with the ribs and rimmed margins of the ostia more or less ciliate or scabrous. All species of *Lepanthes* share these lepanthiform sheaths and a racemose inflorescence.

Species in the genus *Lepanthes* are characterized by a lack of pseudobulbs; ramicauls enclosed by a series of tubular sheaths varying from coarsely long-ciliate with broadly dilated ostia to glabrous with simple nondilated ostia, each bearing a single leaf; the presence of a joint between the ovary and the pedicel; the petals and lip usually transversely lobed; the lip with the midlobe usually forming an appendix; the base of the lip adnate to the underside of the footless column; and the two hard pollinia. Species of *Lepanthes* are distinguished from members of other lepanthiform-sheathed genera by a racemose inflorescence bearing flowers with usually transversely lobed petals, and a lip more or less trilobed with the midlobe usually modified into a structure called the appendix. The appendix may be absent, as simple as a filament, or as elaborate as a combination of lobes, glands and membranes.

Most species of *Lepanthes* share a caespitose or shortly repent habit, with a few exhibiting proliferating ramicauls. The inflorescence is always racemose, varying from congested to lax and from shorter than the leaf to much longer than the leaf. Typically, the petals are transversely bilobed, with the upper lobes overlying the dorsal sepal. The lip is usually three-lobed, with the lobes so greatly modified that describing them requires a special terminology. The "blades" are the thickened lateral lobes of the lip. These blades are supported by "connectives," which often lift the blades above the column, where they may unite or touch. The central part of the lip from which the connectives arise is the "body," attached to the column at its base or above, with or without a claw. The angle of the body between the front margins of the connectives is the "sinus," from which or near which the middle lobe, the "appendix," originates. Some members of the genus have simpler lips, lacking blades and the appendix.

The appendix ranges from a single hair to elaborate structures with lobes, glands and membranes. Investigators have long wondered about the function of this peculiar organ. This mystery was at least partially dispelled by the observations of Blanco and Barboza (Blanco & Barboza 2005), who recorded the pollination of the Costa Rican *Lepanthes glicensteinii* Luer. They witnessed male fungus gnats pollinating this species by genitalic pseudocopulation, lured by the sexually deceptive flower. The male gnats clasp the appendix while attempting to copulate with the flower. Most species of *Lepanthes* share the same general floral morphology as *L. glicensteinii* and may share a similar pollination mechanism. Those species adhering to a different pattern, such as those with a greatly reduced or absent appendix, or a differently structured labellum, may have a different pollination mechanism. The habit of bearing flowers on the underside of the leaf may also be part of a ruse to attract fungus gnat pollinators; the male gnats expect to find females on the underside of leaves.

## Habitat

Species of *Lepanthes* generally grow in the filtered light of moist or wet forests at relatively high altitudes between 1500 and 3000 meters above sea level, where high humidity and chilly nights are guaranteed. Most frequently, they grow entangled with mosses and ferns on twigs or small branches, often in sheltered locations but sometimes in the tops of trees where air movement is most constant. High altitude elfin cloud forests are particularly rich habitats, meeting all of these requirements. Some of the larger, particularly robust species grow as terrestrials. Most species respond to cultivation in greenhouses or protected growing areas where these conditions are duplicated, often growing far more luxuriantly than the depauperate specimens frequently encountered in the wild.

## A Note About Type Citations

In this manuscript, types associated with the valid species are cited with an initial capital letter, e.g., "Holotype." Types associated with synonyms, invalid or illegitimate names are cited with a lowercase initial letter, e.g., "holotype."

**LEPANTHES** Sw., Nova Acta Regiae Soc. Sci. Upsal. 6: 85, 1799.

Ety.: From the Greek *lepis*, "scale," and *anthos*, "flower," because plants of this genus grow on the bark of trees (translated from the Latin provided by Swartz, 1799: 85).

Lectotype: *Lepanthes concinna* Sw., Nova Acta Regiae Soc. Sci. Upsal. nom. illeg. superfl. for *Epidendrum ovale* Sw. designated by Britton & Wilson, Sci. Surv. Porto Rico 5(2):206 [≡ *Lepanthes ovalis* (Sw.) Fawc. & Rendle, Fl. Jamaica 1: 71, 1910].

The genus *Lepanthes* has been divided into subgenera, sections, subsections, and series (Luer 1986, 1987a & b, 1993). The series have been discarded (Luer & Thoerle 2010). Two subgenera are recognized: *Lepanthes* subgen. *Marsipanthes* Luer, with six species in Colombia; and *Lepanthes* subgen. *Lepanthes*, with over 290 species. *Lepanthes* subsect. *Bilabiatae* Luer and *Lepanthes* sect. *Caprimulganae* Luer have no known representatives in Colombia. The following subgenera, sections, and subsections are represented in Colombia.

**Lepanthes** subgen. **Marsipanthes** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 34, 1986.

Ety.: From the Greek *marsipos*, "a pouch," and *anthos*, "a flower," for the pouchlike sepaline tube.

Type: *Lepanthes ribes* Luer, Selbyana 3: 14, 1976.

**Plants** perennial, small to medium in size, epiphytic, caespitose; roots slender. Ramicauls unifoliate, erect, suberect, to more or less horizontal, enclosed by a series of tubular, more or less imbricating, ribbed sheaths with oblique, dilated ostia, scabrous or ciliate on the thickened margins and ribs. **Leaf** erect in relation to the ramicaul, coriaceous, green or dark green, sometimes suffused with purple, elliptical, subacute to obtuse, shallowly notched with a mucro in the sinus, the base contracted into a short petiole. **Inflorescence** a congested, successively few-flowered raceme, borne from near the base of the leaf to beyond its tip by a slender peduncle, from an annulus near the apex of the ramicaul, with the flowers resupinate; floral bracts and pedicels short; ovary costate, smooth to serrulate to spiculate, trivalvate; **sepals** variously connate into an inflated tube or a gaping flower; **petals** thick, fleshy, variously shaped from transversely ovate to elongate, forked, or clavate; **lip** small, entire to bilobed with the sides embracing the column to bilobed with a rudimentary appendix as in the subgenus *Lepanthes*, the base connate to the base of the column; **column** terete, short, the anther, rostellum, and stigma apical, the anther cap deciduous, 2-celled, the pollinia 2, clavate-pyriform, attached to a detachable viscidium.

The following sections have representative species in Colombia:

**Lepanthes** sect. **Felinae** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 34, 1986.
Type: *Lepanthes felis* Luer & R. Escobar, Amer. Orchid Soc. Bull. 52(12): 1264, 1983.

Species in this section are characterized by a successively flowered raceme of showy flowers borne on top of the leaf from near the base to beyond the apex by a slender peduncle. The petals are erect, thick, and fleshy, sometimes forked. The lip is bilobed with the lobes surrounding the column as is often seen in *Lepanthes* subgen. *Lepanthes.*

**Lepanthes** sect. **Marsipanthes**
Type: *Lepanthes ribes* Luer, Selbyana, 3(1-2): 14, 1976.

This unispecific section is characterized by a successively flowered raceme of large inflated flowers borne beyond the leaf by a slender, arching peduncle. The petals are erect and elongated, and the lip is bilobed.

**Lepanthes** subgen. **Lepanthes**
**Lepanthes** sect. **Lepanthes**
Syn.: *Lepanthes* sect. *Macrocladae* Rchb. f., Xenia Orch. 1: 143, 1858.
Lectotype: *Epidendrum ovale* Sw., designated by Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 32, 1986. [≡ *Lepanthes ovalis* (Sw). Fawc. & Rendle, Fl. Jamaica 1: 71, 1910].
Ety.: From the Greek *makrocladium*, "a long branch," referring to the length of the ramicauls as opposed to the short ramicauls of sect. *Brachycladium* Rchb. f.

Syn.: *Lepanthes* sect. *Diplocheilus* Fawc. & Rendle, Fl. Jamaica 1: 67, 1910.
Lectotype: *Epidendrum ovale* Sw., designated by Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 32, 1986. [≡ *Lepanthes ovalis* (Sw). Fawc. & Rendle, Fl. Jamaica 1: 71, 1910].
Ety.: From the Greek *diplocheilos*, "a double lip," referring to the blades of the lip.

Syn.: *Lepanthes* sect. *Haplocheilus* Fawc. & Rendle, Fl. Jamaica 1: 68, 1910.
Lectotype: *Lepanthes brevipetala* Fawc. & Rendle, designated by Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 32, 1986.
Ety.: From the Greek *haplocheilos*, "a single lip," referring to the undivided lip.

Syn.: *Lepanthes* sect. *Fawcelepanthes* Cogn., Orch. Antill. 434, 1910.
Lectotype: *Lepanthes brevipetala* Fawc. & Rendle, designated by Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 32, 1986.
Ety.: Named in honor of William Fawcett, investigator of the orchids of Jamaica.

Syn.: *Lepanthes* sect. *Rendlelepanthes* Cogn., Orch. Antill. 435, 1910.
Lectotype: *Epidendrum ovale* Sw. designated by Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 32, 1986. [≡ *Lepanthes ovalis* (Sw). Fawc. & Rendle, Fl. Jamaica 1: 71, 1910].
Ety.: Named in honor of Alfred Rendle, investigator of the orchids of Jamaica.

**Plants** perennial, very small to large, weak to robust, erect to pendent, epiphytic, lithophytic to terrestrial, the rhizome very short to elongate between ramicauls; roots few to many, slender to coarse or fleshy. Ramicauls ascending to erect, single to proliferating another ramicaul, slender to stout, non-pseudobulbous, usually longer than the leaf, unifoliate, enclosed by a series of tubular, ribbed, imbricating sheaths with oblique, more or less dilated ostia, with the ribs and thickened margins of the ostia usually scabrous or ciliate, with the inflorescence rising with an annular ring (annulus) from near the apex (the leaf-stem abscission layer). **Leaf** erect or horizontal in relation to the ramicaul, rarely deflexed, coriaceous to thinly coriaceous, smooth, ciliate, or spiculate, rarely reticulated, often suffused with purple, subcircular, ovate to narrowly ovate, elliptical to narrowly elliptical to linear or rarely terete, the apex acute, obtuse, to rounded, shallowly notched with a mucro in the sinus, the base rounded, cuneate or narrowly cuneate into a short petiole. **Inflorescence** racemose, single or fasciculate, longer or shorter than the leaf, densely or distantly flowered, few- to many-flowered, usually successive, borne by a slender peduncle either on top of the leaf, behind the leaf, or far beyond the leaf;

floral bracts thin and tubular to infundibular, oblique, often ciliate or echinate; pedicels slender to stout, longer or shorter than the floral bract; ovary smooth or spiculate, trivalvate with the ribs smooth, carinate or crested; flowers variously colored; **sepals** conspicuous, usually membranous, glabrous or pubescent, broad to narrow, obtuse to acute or acuminate, occasionally caudate, free to deeply connate, 1- to 3-veined, rarely more, with margins smooth, ciliate, denticulate, or otherwise irregular; **petals** membranous, usually transversely bilobed, occasionally with a marginal process or additional lobes or rarely only a single lobe, glabrous to pubescent; **lip** variously trilobed, with the margins of the lateral lobes most often developed into *blades* that flank or overlie the column, the portion of the lateral lobe below the blade is the *connective*, the middle lobe is variously developed into the *appendix*, a unique and extremely variable structure, the central portion of the lip between the two connectives and from which the appendix arises is the *body*, the body connate to the base or undersurface of a footless column; **column** more or less terete with the apex clavate, the anther dorsal or apical, unhooded, the rostellum apical, the pollinia 2, yellow, pyriform, with a common viscidium, the stigma single- or bi-lobed, apical, subapical, or ventral, the base of the column footless, continuous with the ovary.

The following subsections have representative species in Colombia:

Section **Lepanthes** subsect. **Breves** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 61: 7, 1996.

Type: *Lepanthes monoptera* Lindl., J. Bot. [Hooker] 1: 10, 1834

.

Species in this subsection are characterized by one-veined lateral sepals.

Section **Lepanthes** subsect. **Lepanthes**

Lectotype: *Epidendrum ovale* Sw. designated by Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 32, 1986. [≡ *Lepanthes ovalis* (Sw). Fawc. & Rendle, Fl. Jamaica 1: 71, 1910].

Species in this subsection are characterized by two- to three-veined lateral sepals.

## SUMMARY OF THE PRESENT CLASSIFICATION OF THE GENUS *LEPANTHES*

I. *Lepanthes* subgen. *Marsipanthes*
  1. *Lepanthes* sect. *Caprimulginae*
  2. *Lepanthes* sect. *Felinae*
  3. *Lepanthes* sect. *Marsipanthes*

II. *Lepanthes* subgen. *Lepanthes*
  1. *Lepanthes* sect. *Lepanthes*
    a. *Lepanthes* subsect. *Bilabiatae*
    b. *Lepanthes* subsect. *Breves*
    c. *Lepanthes* subsect. *Lepanthes*

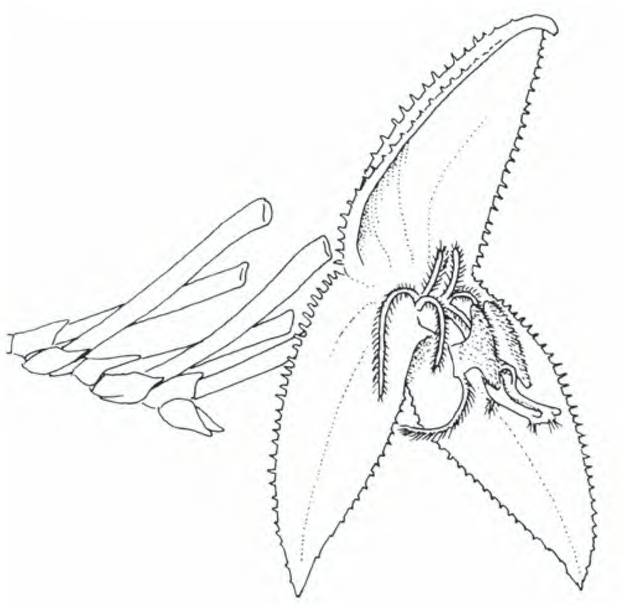
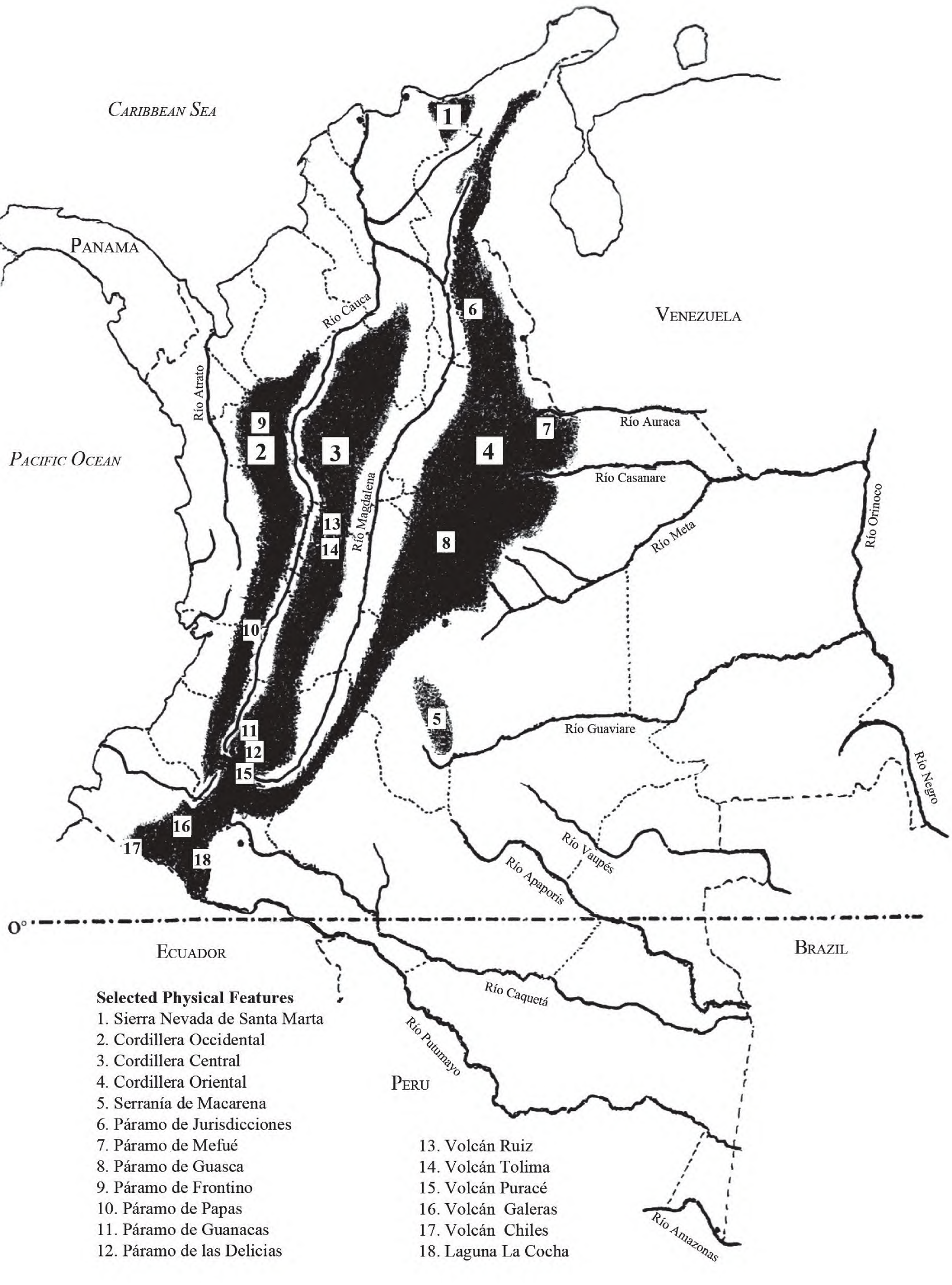


Fig. 2. Political Map of Colombia




**Selected Physical Features**

1. Sierra Nevada de Santa Marta
2. Cordillera Occidental
3. Cordillera Central
4. Cordillera Oriental
5. Serranía de Macarena
6. Páramo de Jurisdicciones
7. Páramo de Mefué
8. Páramo de Guasca
9. Páramo de Frontino
10. Páramo de Papas
11. Páramo de Guanacas
12. Páramo de las Delicias
13. Volcán Ruiz
14. Volcán Tolima
15. Volcán Puracé
16. Volcán Galeras
17. Volcán Chiles
18. Laguna La Cocha

Fig. 3. Physical Map of Colombia

# Illustrations of species of *Lepanthes* attributed to Colombia

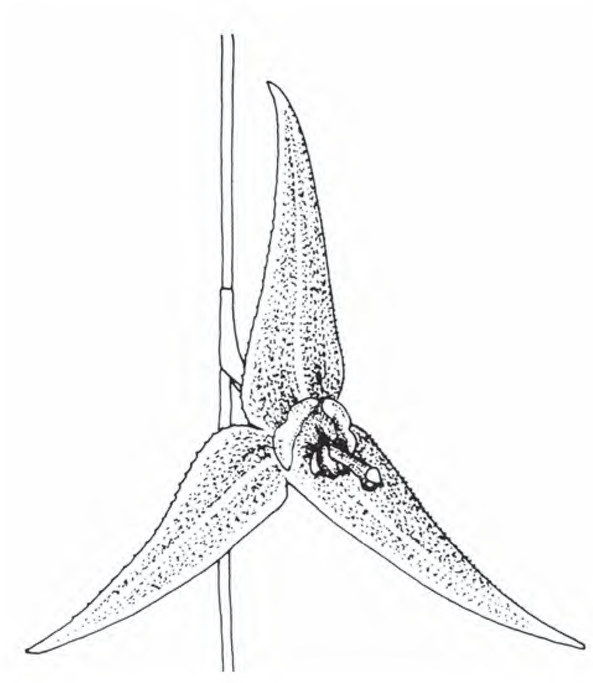
Accepted species are in **bold**. Synonyms are in *italics*.


Fig. 1. **Lepanthes abortiva** Luer & R. Escobar
Fig. 2. **Lepanthes acarina** Luer
Fig. 3. **Lepanthes aciculifolia** Luer
Fig. 4. **Lepanthes acrogenia** Luer & R. Escobar
Fig. 5. **Lepanthes acutissima** Luer & R. Escobar
Fig. 6. **Lepanthes aduncata** Luer & R. Escobar
Fig. 7. **Lepanthes affinis** Luer & R. Escobar
Fig. 8. **Lepanthes aggeris** Luer & R. Escobar
Fig. 9. **Lepanthes agglutinata** Luer
Syn.: *Lepanthes porphyrea* Luer & R. Escobar
Fig. 10. **Lepanthes aguirrei** Luer
Fig. 11. **Lepanthes alcicornis** Luer & R. Escobar
Fig. 12. **Lepanthes alkaia** Luer & R. Escobar
Fig. 13. **Lepanthes alvarezii** P. Ortiz
Fig. 14. **Lepanthes amplior** Luer & R. Escobar
Fig. 15. **Lepanthes amplisepala** Luer & R. Escobar
Fig. 16. **Lepanthes anatina** Luer & R. Escobar
Fig. 17. **Lepanthes anchorifera** Luer
Fig. 18. **Lepanthes andrenoglossa** Rchb. f.
Fig. 19. **Lepanthes anemica** Luer & Thoerle
Fig. 20. **Lepanthes anserina** Luer & R. Escobar
Fig. 21. **Lepanthes antennata** Luer & R. Escobar
Fig. 22. **Lepanthes antennifera** Luer & R. Escobar
Fig. 23. **Lepanthes aperta** Luer
Fig. 24. **Lepanthes aquila-borussiae** Rchb. f.
Syn.: *Lepanthes rabei* Foldats
Fig. 25. **Lepanthes arbuscula** Luer & R. Escobar
*Lepanthes arethusa* Luer & R. Escobar = **Lepanthes venusta** Luer & R. Escobar
Fig. 26. **Lepanthes argentata** Luer & R. Escobar
Fig. 27. **Lepanthes aries** Luer
Fig. 28. **Lepanthes aristata** Luer & R. Escobar
Fig. 29. **Lepanthes athena** Luer
Fig. 30. **Lepanthes atomifera** Luer & R. Escobar
Fig. 31. **Lepanthes auditor** Luer & R. Escobar
Fig. 32. **Lepanthes aures-asini** Luer & R. Escobar
Fig. 33. **Lepanthes auriculata** Luer
*Lepanthes auspicata* Luer & R. Escobar = **Lepanthes satyrica** Luer & R. Escobar
Fig. 34. **Lepanthes ballatrix** Luer
Fig. 35. **Lepanthes barclaya** Luer & Thoerle
Fig. 36. **Lepanthes beatrizae** Luer & R. Escobar
*Lepanthes bifurcata* Luer & R. Escobar ≡ **Lepanthes georgii** Luer
Fig. 37. **Lepanthes biglomeris** Luer & R. Escobar
Fig. 38. **Lepanthes biloba** Lindl.
Syn.: *Lepanthes otostalix* Rchb. f.
Syn.: *Lepanthes peniculus* Luer
Syn.*: Lepanthes metaxy* Luer & Hirtz
Fig. 39. **Lepanthes binaria** Luer & Hirtz
Fig. 40. **Lepanthes bipinnatula** Luer & R. Escobar
Fig. 41. **Lepanthes bitriangularis** Luer & R. Escobar
Fig. 42. **Lepanthes boyacensis** Luer & R. Escobar
Fig. 43. **Lepanthes brevipedicellata** Luer, R. Escobar & Thoerle
Fig. 44. **Lepanthes cacique-tone** Luer & R. Escobar
Fig. 45. **Lepanthes cactoura** Luer & R. Escobar
Fig. 46. **Lepanthes caesariata** Luer & R. Escobar
*Lepanthes caetanoae* O. Pérez, E. Parra & Kolan. = **Lepanthes declivis** Luer & R. Escobar
Fig. 47. **Lepanthes calimae** P. Ortiz
Fig. 48. **Lepanthes callisto** Luer & Hirtz
Fig. 49. **Lepanthes calodictyon** Hook.
Fig. 50. **Lepanthes canaliculata** Luer & R. Escobar
Fig. 51. **Lepanthes carrilloi** Luer & Thoerle
Fig. 52. **Lepanthes carunculigera** Rchb. f.
*Lepanthes caucana* Schltr. ≡ **Lepanthes tracheia** Rchb. f.
Fig. 53. **Lepanthes caudata** Luer & R. Escobar
Fig. 54. **Lepanthes caudatisepala** C. Schweinf.
Fig. 55. **Lepanthes cerambyx** Luer & R. Escobar
Fig. 56. **Lepanthes cercion** Luer & R. Escobar
Fig. 57. **Lepanthes chelonion** Luer & R. Escobar
Fig. 58. **Lepanthes chimaera** Luer & R. Escobar
Fig. 59. **Lepanthes chocoënsis** Luer & Thoerle
Fig. 60. **Lepanthes cincinnata** Luer & R. Escobar
Fig. 61. **Lepanthes cingens** Luer & R. Escobar
Fig. 62. **Lepanthes clausa** Luer & R. Escobar
Fig. 63. **Lepanthes climax** Luer & R. Escobar
Fig. 64. **Lepanthes cocculifera** Luer & R. Escobar
Fig. 65. **Lepanthes cogolloi** Luer & R. Escobar
Fig. 66. **Lepanthes conchyliata** Luer
Fig. 67. **Lepanthes confusa** Ames & C. Schweinf.
Fig. 68. **Lepanthes contingens** Luer
Fig. 69. **Lepanthes cordata** Luer & R. Escobar
Fig. 70. **Lepanthes cornualis** Luer & R. Escobar
Fig. 71. **Lepanthes corrugata** Luer & Dalström
Fig. 72. **Lepanthes cuatrecasasii** Luer
Fig. 73. **Lepanthes cucullata** Luer & R. Escobar
Fig. 74. **Lepanthes culex** Luer & R. Escobar
Fig. 75. **Lepanthes cuneiformis** Luer & R. Escobar
Fig. 76. **Lepanthes cunicularis** Luer & R. Escobar
Fig. 77. **Lepanthes cyclochila** Luer & R. Escobar
Fig. 78. **Lepanthes cymbium** Luer & R. Escobar
*Lepanthes dapaënsis* P. Ortiz, O. Pérez & E. Parra = **Lepanthes tomentosa** Luer
Fig. 79. **Lepanthes darioi** Luer & R. Escobar
Fig. 80. **Lepanthes dasyura** Luer & R. Escobar
Fig. 81. **Lepanthes debedoutii** P. Ortiz
Fig. 82. **Lepanthes debilis** Luer & R. Escobar
Fig. 83. **Lepanthes declivis** Luer & R. Escobar
Syn.: *Lepanthes caetanoae* O. Pérez, E. Parra & Kolan.
Fig. 84. **Lepanthes deficiens** Luer & R. Escobar
Fig. 85. **Lepanthes deformis** Luer & Hirtz

Fig. 86. **Lepanthes deliciasensis** Luer & R. Escobar
Fig. 87. **Lepanthes deutera** Luer & Thoerle
Fig. 88. **Lepanthes dewildei** Luer & R. Escobar
Fig. 89. **Lepanthes diabolica** Luer & R. Escobar
Fig. 90. **Lepanthes dicyrtopetala** Luer & Hirtz
Fig. 91. **Lepanthes didactyla** Luer & R. Escobar
Fig. 92. **Lepanthes discolor** Luer & R. Escobar
Fig. 93. **Lepanthes dodsonii** Luer
Fig. 94. **Lepanthes dolabrata** Luer & R. Escobar
Fig. 95. **Lepanthes dryades** Luer & R. Escobar
Fig. 96. **Lepanthes dumbo** Luer
Fig. 97a., 97b. **Lepanthes dunstervilleorum** Foldats
Syn.: *Lepanthes hispida* Luer & R. Escobar
Fig. 98. **Lepanthes echidion** Luer & R. Escobar
Fig. 99. **Lepanthes ectopa** Luer
Fig. 100. **Lepanthes edwardsii** Ames
Fig. 101. **Lepanthes effusa** Schltr.
Syn.: *Lepanthes millei* Schltr.
Fig. 102a., 102b. **Lepanthes elata** Rchb. f.
Syn.: *Lepanthes oteroi* Luer & R. Escobar
Fig. 103. **Lepanthes elephantina** Luer & R. Escobar
Fig. 104. **Lepanthes elongata** Luer & Hirtz
Fig. 105. **Lepanthes equicalceolata** Luer & R. Escobar
Fig. 106. **Lepanthes eros** Luer & R. Escobar
Fig. 107. **Lepanthes erythrocles** Luer & R. Escobar
Fig. 108. **Lepanthes escifera** Luer & R. Escobar
Fig. 109. **Lepanthes escobariana** Garay
Fig. 110. **Lepanthes eucerca** Luer & Thoerle
Fig. 111. **Lepanthes exaltata** Luer & R. Escobar
Fig. 112. **Lepanthes felis** Luer & R. Escobar
Fig. 113. **Lepanthes ferax** Luer & R. Escobar
Fig. 114. **Lepanthes fibulifera** Luer & R. Escobar
Fig. 115. **Lepanthes filamentosa** Luer & Hirtz
Fig. 116. **Lepanthes focalis** Luer
Fig. 117. **Lepanthes fonnegrae** Luer & R. Escobar
Fig. 118. **Lepanthes forceps** Luer & R. Escobar
Fig. 119. **Lepanthes foreroi** P. Ortiz, O. Pérez & E. Sánchez
Fig. 120. **Lepanthes foveata** Luer & R. Escobar
Fig. 121. **Lepanthes furcata** Luer & R. Escobar
Fig. 122. **Lepanthes gargantua** Rchb. f.
Syn.: *Lepanthes pachyrhiza* Luer & Hirtz
Fig. 123. **Lepanthes gelata** Luer & R. Escobar
Fig. 124. **Lepanthes gemina** Luer & R. Escobar
Fig. 125. **Lepanthes georgii** Luer
Syn.: [≡ *Lepanthes bifurcata* Luer & R. Escobar]
Fig. 126. **Lepanthes giraldoi** Luer
*Lepanthes gnoma* Luer & Hirtz = **Lepanthes lilliputae** Luer & R. Escobar
Fig. 127. **Lepanthes golondrina** Luer & R. Escobar
Fig. 128. **Lepanthes grildrig** Luer & R. Escobar
*Lepanthes guaduasensis* Luer & R. Escobar = **Lepanthes macrostylis** Luer & R. Escobar
Fig. 129. **Lepanthes guanacasensis** Luer & R. Escobar
Fig. 130. **Lepanthes gustavoi** Luer & R. Escobar
Fig. 131. **Lepanthes guttula-sanguinis** Luer & R. Escobar
Fig. 132. **Lepanthes habenifera** Luer & R. Escobar
Fig. 133. **Lepanthes helgae** Luer & R. Escobar
Fig. 134. **Lepanthes helicocephala** Rchb. f.
Fig. 135. **Lepanthes hemirhoda** Garay
Fig. 136. **Lepanthes heptapus** Luer & R. Escobar
Fig. 137. **Lepanthes heteroloba** Luer, R. Escobar & Thoerle
Fig. 138. **Lepanthes hexapus** Luer & R. Escobar
Fig. 139. **Lepanthes hirpex** Luer & R. Escobar
Fig. 140. **Lepanthes hirsutula** Luer & Hirtz
Fig. 141. **Lepanthes hirtzii** Luer
*Lepanthes hispida* Luer & R. Escobar = **Lepanthes dunstervilleorum** Foldats
Fig. 142. **Lepanthes hortensis** Luer & R. Escobar
Fig. 143. **Lepanthes hubeinii** Luer
Fig. 144. **Lepanthes hurgo** Luer & Behár
Fig. 145. **Lepanthes hyphosa** Luer & R. Escobar
Fig. 146. **Lepanthes ictalurus** Luer
Fig. 147. **Lepanthes illex** Luer
Fig. 148. **Lepanthes imbricans** Luer & R. Escobar
Fig. 149. **Lepanthes imposita** Luer & R. Escobar
Fig. 150. **Lepanthes impotens** Luer & R. Escobar
Fig. 151. **Lepanthes insolita** Luer & R. Escobar
Fig. 152. **Lepanthes intonsa** Luer
Fig. 153. **Lepanthes ionoptera** Rchb. f.
Fig. 154. **Lepanthes isochila** Luer
Fig. 155. **Lepanthes isosceles** Luer & R. Escobar
Fig. 156. **Lepanthes janitor** Luer & R. Escobar
*Lepanthes janus* Luer & R. Escobar = **Lepanthes norae** Foldats
Fig. 157. **Lepanthes jardinensis** Luer & R. Escobar
Fig. 158. **Lepanthes juan-felipei** Luer & Thoerle
Fig. 159. **Lepanthes jubata** Luer
Fig. 160. **Lepanthes labiata** Luer
Fig. 161. **Lepanthes lacera** Luer & Thoerle
Fig. 162. **Lepanthes larvina** Luer & R. Escobar
Fig. 163. **Lepanthes lasiopetala** Garay & Dunst.
Fig. 164. **Lepanthes ligiae** Luer & R. Escobar
Fig. 165. **Lepanthes lilliputae** Luer & R. Escobar
Syn.: *Lepanthes gnoma* Luer & Hirtz
Fig. 166. **Lepanthes limbata** Luer & R. Escobar
Fig. 167. **Lepanthes linealis** Luer & R. Escobar
Fig. 168. **Lepanthes lingulosa** Luer & R. Escobar
Fig. 169. **Lepanthes lycocephala** Luer & R. Escobar
Fig. 170. **Lepanthes macdougalii** Luer & Thoerle
Fig. 171. **Lepanthes macrantha** Garay
Fig. 172. **Lepanthes macrostylis** Luer & R. Escobar
Syn.: *Lepanthes guaduasensis* Luer & R. Escobar
*Lepanthes macroura* Schltr. = **Lepanthes mucronata** Lindl.

Fig. 173. **Lepanthes manabina** Dodson
Syn.: *Lepanthes mastodon* Luer
Fig. 174. **Lepanthes maria-victoriae** Luer & Thoerle
Fig. 175. **Lepanthes marthae** Luer & R. Escobar
*Lepanthes mastodon* Luer = **Lepanthes manabina** Dodson
Fig. 176. **Lepanthes matisii** Luer, Thoerle & P. Ortiz
Fig. 177. **Lepanthes medinae** Luer & Thoerle
Fig. 178. **Lepanthes medusa** Luer & R. Escobar
Fig. 179. **Lepanthes mefueënsis** Luer & R. Escobar
Fig. 180. **Lepanthes meleagris** Luer & R. Escobar
*Lepanthes mesochlora* Rchb. f. = **Lepanthes mucronata** Lindl.
*Lepanthes metaxy* Luer & Hirtz = **Lepanthes biloba** Lindl.
Fig. 181. **Lepanthes micellilabia** Luer & R. Escobar
Fig. 182. **Lepanthes micronyx** Luer & R. Escobar
Fig. 183. **Lepanthes microscopica** Luer & R. Escobar
*Lepanthes millei* Schltr. = **Lepanthes effusa** Schltr.
Fig. 184. **Lepanthes mirabilis** Ames
Fig. 185. **Lepanthes mirador** Luer & Hirtz
Fig. 186. **Lepanthes monitor** Luer
Fig. 187. **Lepanthes monoptera** Lindl.
Syn.: *Lepanthes roseola* Rchb. f.
Fig. 188. **Lepanthes mucronata** Lindl.
Syn.: *Lepanthes macroura* Schltr.
Syn.: *Lepanthes mesochlora* Rchb. f.
Syn.: *Lepanthes tricuspis* Schltr.
Fig. 189. **Lepanthes muscula** Luer & R. Escobar
Fig. 190. **Lepanthes myoxophora** Luer & R. Escobar
Fig. 191. **Lepanthes nautilus** Luer & R. Escobar
Fig. 192. **Lepanthes nematodes** Luer & R. Escobar
Fig. 193 **Lepanthes nematostele** Luer
Fig. 194. **Lepanthes nicolasii** Luer & R. Escobar
Fig. 195. **Lepanthes niesseniae** Luer
Fig. 196. **Lepanthes niphas** Luer & R. Escobar
Fig. 197a., 197b. **Lepanthes norae** Foldats
Syn.: *Lepanthes janus* Luer & R. Escobar
Fig. 198. **Lepanthes nulla** Luer & R. Escobar
Fig. 199. **Lepanthes obovata** Luer & R. Escobar
Fig. 200. **Lepanthes octavioi** Luer & R. Escobar
Fig. 201. **Lepanthes octopus** Luer & R. Escobar
Fig. 202. **Lepanthes ollaris** Luer & R. Escobar
Fig. 203. **Lepanthes opetidion** Luer & R. Escobar
Fig. 204. **Lepanthes ophelma** Luer & R. Escobar
Fig. 205. **Lepanthes oreibates** Luer & R. Escobar
Fig. 206. **Lepanthes orion** Luer & R. Escobar
Fig. 207. **Lepanthes ortiziana** O. Pérez, E. Parra & Kolan.
Fig. 208. **Lepanthes oscillifera** Luer & R. Escobar
Fig. 209. **Lepanthes osiris** Luer & R. Escobar
Fig. 210. **Lepanthes ostraconopetala** Luer & Hirtz
*Lepanthes oteroi* Luer & R. Escobar = **Lepanthes elata** Rchb. f.
*Lepanthes otostalix* Rchb. f. = **Lepanthes biloba** Lindl.
Fig. 211. **Lepanthes oxybaphon** Luer & R. Escobar
Fig. 212. **Lepanthes oxypetala** Luer & Hirtz
Fig. 213. **Lepanthes pachoi** Luer & R. Escobar
*Lepanthes pachyrhiza* Luer & Hirtz = **Lepanthes gargantua** Rchb. f.
Fig. 214. **Lepanthes palaga** Luer & R. Escobar
Fig. 215. **Lepanthes panope** Luer & R. Escobar
Fig. 216. **Lepanthes parmata** Luer & R. Escobar
Fig. 217. **Lepanthes pastoënsis** Schltr.
Fig. 218. **Lepanthes penicillifera** Luer
Syn.: [≡ *Lepanthes scopulifera* Luer 2003 (non Luer & R. Escobar 1997)]
*Lepanthes peniculus* Luer = **Lepanthes biloba** Lindl.
Fig. 219. **Lepanthes perdita** Luer & Hirtz
Fig. 220. **Lepanthes petalolenta** Luer & R. Escobar
Fig. 221. **Lepanthes petalopteryx** Luer & R. Escobar
Fig. 222. **Lepanthes phalloides** Luer & R. Escobar
Fig. 223. **Lepanthes pictoris** Luer & Thoerle
Fig. 224. **Lepanthes pilosiaures** Luer & R. Escobar
Fig. 225. **Lepanthes pinnatula** Luer & R. Escobar
Fig. 226. **Lepanthes planadensis** Luer & R. Escobar
Fig. 227. **Lepanthes plectilis** Luer & Hirtz
Fig. 228. **Lepanthes pleurorachis** Luer
Fig. 229. **Lepanthes pleurothallopsis** Luer & R. Escobar
Fig. 230. **Lepanthes popayanensis** Luer & R. Escobar
*Lepanthes porphyrea* Luer & R. Escobar = **Lepanthes agglutinata** Luer
Fig. 231. **Lepanthes porracea** Luer & R. Escobar
Fig. 232. **Lepanthes posadae** Luer & R. Escobar
Fig. 233. **Lepanthes praemorsa** Luer & R. Escobar
Fig. 234. **Lepanthes profusa** Luer & Hirtz
Fig. 235. **Lepanthes prolifera** Foldats
Fig. 236. **Lepanthes pterygion** Luer & R. Escobar
Fig. 237. **Lepanthes pyramidalis** Luer & R. Escobar
Fig. 238. **Lepanthes quadricornis** Luer & R. Escobar
Fig. 239. **Lepanthes quandi** Luer & R. Escobar
*Lepanthes rabei* Foldats = **Lepanthes aquila-borussiae** Rchb. f.
Fig. 240. **Lepanthes ramosii** Luer
Fig. 241. **Lepanthes reburra** Luer & Thoerle
Fig. 242. **Lepanthes refracta** Luer
Fig. 243. **Lepanthes renzii** Luer

Fig. 244. **Lepanthes repens** Luer
Fig. 245. **Lepanthes reticulata** Luer & R. Escobar
Fig. 246. **Lepanthes rhombipetala** Schltr.
Fig. 247. **Lepanthes rhynchion** Luer
Fig. 248. **Lepanthes ribes** Luer
Fig. 249. **Lepanthes ricaurtensis** Luer & R. Escobar
Fig. 250. **Lepanthes rodrigoi** Luer
Fig. 251. **Lepanthes roezliana** Luer & R. Escobar
*Lepanthes roseola* Rchb. f. = **Lepanthes monoptera** Lindl.
Fig. 252. **Lepanthes rutrum** Luer & R. Escobar
Fig. 253. **Lepanthes saccata** Luer & R. Escobar
Fig. 254. **Lepanthes satyrica** Luer & Hirtz
Syn.: *Lepanthes auspicata* Luer & R. Escobar
Fig. 255. **Lepanthes scalaris** Luer
Fig. 256. **Lepanthes scopulifera** Luer & R. Escobar (1997)
*Lepanthes scopulifera* Luer (2003) ≡ **Lepanthes penicillifera** Luer
Fig. 257. **Lepanthes sericinitens** Luer & R. Escobar
Fig. 258. **Lepanthes setifera** Luer & R. Escobar
Fig. 259. **Lepanthes silverstonei** Luer
Fig. 260. **Lepanthes sinuosa** Luer & R. Escobar
Fig. 261. **Lepanthes skeleton** Luer & R. Escobar
Fig. 262. **Lepanthes smaragdina** Luer & R. Escobar
Fig. 263. **Lepanthes solicitor** Luer & R. Escobar
Fig. 264. **Lepanthes spelynx** Luer & R. Escobar
Fig. 265. **Lepanthes stelidilabia** Luer & R. Escobar
Fig. 266. **Lepanthes stellaris** Luer & Hirtz
Fig. 267. **Lepanthes steyermarkii** Foldats
Fig. 268. **Lepanthes strumosa** Luer & R. Escobar
Fig. 269. **Lepanthes stupenda** Luer
Fig. 270. **Lepanthes subulata** Luer & R. Escobar
Fig. 271. **Lepanthes superposita** Schltr.
Fig. 272. **Lepanthes tachirensis** Foldats
Fig. 273. **Lepanthes tamaensis** Foldats
Fig. 274. **Lepanthes tanekes** Luer & R. Escobar
Fig. 275. **Lepanthes telipogoniflora** Schuit. & A. de Wilde
Fig. 276. **Lepanthes tetracola** Luer & R. Escobar
Fig. 277. **Lepanthes tibouchinicola** Luer & R. Escobar
Fig. 278. **Lepanthes tomentosa** Luer
Syn.: *Lepanthes dapaënsis* P. Ortiz, O. Pérez & E. Parra
Fig. 279. **Lepanthes tracheia** Rchb. f.
Syn.: [≡ *Lepanthes caucana* Schltr.]
Fig. 280. **Lepanthes transparens** Luer
Fig. 281. **Lepanthes trichocaulis** Luer & R. Escobar
*Lepanthes tricuspis* Schltr. = **Lepanthes mucronata** Lindl.
Fig. 282. **Lepanthes trifurcata** Luer & R. Escobar
Fig. 283. **Lepanthes trimerinx** Luer
Fig. 284. **Lepanthes trinaria** Luer & R. Escobar
Fig. 285. **Lepanthes troglodytes** Luer & R. Escobar
Fig. 286. **Lepanthes troxis** Luer & R. Escobar
Fig. 287. **Lepanthes tsubotae** Luer & R. Escobar
Fig. 288a., 288b. **Lepanthes umbonata** Luer & R. Escobar
Fig. 289. **Lepanthes uncifera** Luer & R. Escobar
Fig. 290. **Lepanthes uribei** Luer
Fig. 291. **Lepanthes valenciae** Luer & R. Escobar
Fig. 292. **Lepanthes vellicata** Luer & Hirtz
Fig. 293. **Lepanthes venusta** Luer & R. Escobar
Syn.: *Lepanthes arethusa* Luer & R. Escobar
Fig. 294. **Lepanthes viahoënsis** Luer & R. Escobar
Fig. 295. **Lepanthes vibrissa** Luer & Hirtz
Fig. 296. **Lepanthes vieirae** Luer & R. Escobar
Fig. 297. **Lepanthes volvox** Luer & R. Escobar
Fig. 298. **Lepanthes wageneri** Rchb. f.
Fig. 299. **Lepanthes yubarta** E. Calderón
Fig. 300. **Lepanthes zapatae** Luer & R. Escobar



## KEY TO THE SUBGENERA, SECTIONS, AND SUBSECTIONS OF *LEPANTHES* REPRESENTED IN COLOMBIA

1 Sepals variously connate into an inflated tube or a gaping flower; petals 1-lobed or with a vestigial lower lobe, with the upper lobe thick and erect (subgen. **Marsipanthes**)
2 Sepals deeply connate into an inflated flower borne far beyond the leaf by an elongated, arching peduncle..... sect. **Marsipanthes**
2′ Sepals variously connate, not an inflated flower borne far beyond the leaf..... sect. **Felinae**
1′ Sepals variously connate, petals not as above (subgen. **Lepanthes**)
3 Lateral sepals 1-veined .....subsect. **Breves**
3′ Lateral sepals 2- or 3-veined.....subsect. **Lepanthes**

## KEY TO THE SPECIES OF LEPANTHES

### KEY TO THE SPECIES OF *LEPANTHES* SUBGEN. *MARSIPANTHES*

*Lepanthes* subgen. *Marsipanthes*
Characterized by thick, fleshy, erect petals.

1 Sepals deeply connate into an inflated flower, borne far beyond the leaf by an elongated, arching peduncle (sect. *Marsipanthes*).....*L. ribes*
1′ Sepals gaping, flower not borne far beyond the leaf by an elongated, arching peduncle (sect. *Felinae*)
2 Raceme shorter than the leaf; petals transversely bilobed ..... *L. niesseniae*
2′ Raceme as long or longer than the leaf; petals not transversely bilobed
3 Petals oblong, not forked
4 Lateral sepals ovate, acute; lip with lobes ovate, obtuse, connate to the column above the base..... *L. felis*
4′ Lateral sepals broadly ovate, contracted into slender caudae; lip horseshoe-shaped, connate to the base of the column..... *L. equicalceolata*
3′ Petals forked
5 Petals forked above the middle..... *L. carunculigera*
5′ Petals forked from near the base..... *L. quadricornis*

### KEYS TO THE SPECIES OF *LEPANTHES* SECT. *LEPANTHES*

*Lepanthes* subsect. *Breves*
Characterized by 1-veined lateral sepals.

1 Peduncle longer than the leaf
2 Sepals long-attenuate or long-caudate
3 Sepals abruptly contracted into long caudae; lip 4-lobed, H-shaped.. *L. trimerinx*
3′ Sepals long-attenuate; lip not 4-lobed
4 Sepals filamentous; petals bifurcate, filiform ..... *L. filamentosa*
4′ Sepals narrowly triangular; petals bilobed-lunate..... *L. grildrig*
2′ Sepals not long-attenuate or long-caudate
5 Flower not opening widely; dorsal sepal deeply concave, lateral sepals free..... *L. cucullata*

5′ Flower opening widely; dorsal sepal flat, lateral sepals connate about half their length ..... *L. aggeris*
1′ Peduncle shorter than the leaf
6 Ramicauls usually 5 cm or less long
7 Lateral sepals with margins denticulate or ciliate
8 Petals with 3 acute lobes; lip with lobes falcate..... *L. trifurcata*
8′ Petals transversely bilobed; lip with blades well developed
9 Petals as wide as the length of a sepal, lobes narrowly linear-triangular; lip with blades narrowly ovate ..... *L. renzii*
9′ Petals narrower than the length of a sepal, upper lobe triangular or subfalcate-oblong, lower lobe triangular; lip with blades ovate
10 Inflorescence lax; lip with blades with bases decurved, appendix long, slender, pedunculate..... *L. pinnatula*
10′ Inflorescence congested; lip with blades with bases not decurved, appendix bifid..... *L. vieirae*
7′ Lateral sepals with margins smooth
11 Dorsal sepal 1-veined
12 Petals wider than the length of a sepal; lip with blades much shorter than column
13 Sepals narrowly triangular ..... *L. eros*
13′ Sepals ovate ..... *L. hurgo*
12′ Petals narrower than the length of a sepal; lip with blades at least as long as the column
14 Ramicauls less than 2 cm long; lip with blades broadly oblong, with appendix..... *L. lilliputae*
14′ Ramicauls more than 3 cm long; lip with blades narrowly oblong, without appendix..... *L. nulla*
11′ Dorsal sepal 3-veined
15 Lateral sepals deeply connate into a subcircular synsepal with shortly bifid apices; petals with upper lobe cuneate..... *L. cuneiformis*
15′ Lateral sepals connate half their length or less; petals with upper lobe not cuneate
16 Lateral sepals obtuse; lip 1-lobed with apex retuse..... *L. labiata*
16′ Lateral sepals acute or acuminate; lip with blades
17 Petals narrower than the length of a sepal
18 Sepals glabrous; petals with lobes obliquely triangular with a small obtuse angle on the outer margin ..... *L. linealis*
18′ Sepals microscopically pubescent; petals with lobes obtusely oblong-ovate..... *L. lasiopetala*
17′ Petals as wide or wider than the length of a sepal..... *L. mefueënsis*
6′ Ramicauls usually 5 cm or more long
19 Ramicauls usually less than 10 cm long
20 Lateral sepals denticulate
21 Petals with lobes subequal, oblong-ovate ..... *L. reburra*
21′ Petals with upper lobe oblong, lower lobe smaller, triangular..... *L. ferax*
20′ Lateral sepals with margins smooth
22 Lateral sepals with apices diverging more than 90°; petals with lobes narrowly triangular ..... *L. niphas*
22′ Lateral sepals with apices diverging less than 90°; petals with lobes not narrowly triangular

23 Petals with upper lobe broadly oblong, lower lobe smaller, triangular..... *L. hemirhoda*
23′ Petals with lobes oblong
24 Leaf narrowly elliptical-ovate; inflorescence loose; petals without a small marginal angle between the lobes..... *L. macdougalii*
24′ Leaf ovate; inflorescence subcongested; petals with a small marginal angle between the lobes..... *L. cuatrecasasii*
19′ Ramicauls usually longer than 10 cm
25 Sepals smooth-margined
26 Lateral sepals connate more than half their length, with caudae 2 mm long..... *L. barclaya*
26′ Lateral sepals nearly free, with apices acute..... *L. macdougalii*
25′ Sepals denticulate, may be minutely so
27 Lateral sepals diverging ca. 180°; lip with apical third lacking blades..... *L. tachirensis*
27′ Lateral sepals diverging 90° or less; lip with blades completely developed
28 Petals with upper lobe broadly oblong, lower lobe smaller, narrowly oblong..... *L. rhynchion*
28′ Petals not as above
29 Lateral sepals obtuse; petals with lobes narrowly triangular..... *L. cornualis*
29′ Lateral sepals acute; petals with lobes oblong to triangular..... *L. monoptera*

Section *Lepanthes* subsect. *Lepanthes*
Characterized by 2- or 3-veined lateral sepals

Key to Convenient Groups

1 Inflorescence loose, the rachis between floral bracts longer than the pedicels..... Key I
1′ Inflorescence congested, the rachis between floral bracts shorter than the pedicels
2 Leaf ciliate, pubescent, verrucose, or obviously reticulate; or very thickly coriaceous, may be terete or canaliculate; or margins crenulate, undulate, or erose; or deeply sulcate..... Key II
2′ Leaf not as above
3 Petals with a marginal process, may be a small apiculum or lobule, or 3 or 4 lobes..... Key III
3′ Petals lacking a marginal process, with 2 lobes
4 Lateral sepals 3-veined..... Key IV
4′ Lateral sepals 2-veined
5 Ramicauls 5 cm or less long..... Key V
5′ Ramicauls longer than 5 cm
6 Ramicauls 5-10 cm long..... Key VI
6′ Ramicauls 10 cm or more long..... Key VII

Key I: Inflorescence loose, the rachis between floral bracts longer than the pedicels

1 Habit prolific
2 Petals with a small marginal angle or apiculum between lobes
3 Petals with upper lobe curved, hornlike..... *L. osiris*

3′ Petals with upper lobe oblong, end rounded
4 Petals with rounded upper lobe much larger than triangular lower lobe; lip with blades with ends acute, bases recurved..... *L. climax*
4′ Petals with lobes subequal; lip with apices truncate, bases rounded, not recurved..... *L. superposita*
2′ Petals without an angle or apiculum between lobes
5 Sepals forming a concave cup, long-caudate, each 20 mm long..... *L. chimaera*
5′ Sepals more or less flat, acute to acuminate, each 15 mm or less long
6 Sepals each 7 mm long..... *L. scalaris*
6′ Sepals each ca. 15 mm long
7 Lateral sepals connate more than half their length; lip with blades oblong..... *L. amplisepala*
7′ Lateral sepals connate less than half their length; lip with blades elliptical..... *L. arbuscula*
1′ Habit caespitose
8 Plants small in size, ramicauls less than 5 cm long
9 Petals 3- or 1-lobed
10 Sepals transversely ovate, deeply connate into a subcircular flower; petals with 3 slender lobes..... *L. telipogoniflora*
10′ Sepals not forming a subcircular flower; petals 1-lobed
11 Sepals denticulate, narrowly ovate, acute; petals erect, narrowly linear..... *L. abortiva*
11′ Sepals smooth-margined, ovate, long-caudate; petals erect or more or less horizontal, elliptical..... *L. mirabilis*
9′ Petals bilobed
12 Sepals forming a cup
13 Lateral sepals deeply connate to form a broadly ovate, shortly bifid synsepal with subacute apices
14 Sepals each ca. 15 mm long; lip with blades elliptical, subequal to column in length..... *L. escobariana*
14′ Sepals each ca. 10 mm long; lip with blades narrowly oblong, ca. twice as long as the column..... *L. cymbium*
13′ Lateral sepals not forming a broadly ovate synsepal
15 Sepaline cup globose; lateral sepals sharply deflexed above the middle..... *L. erythrocles*
15′ Sepaline cup bowl-shaped; lateral sepals not sharply deflexed above the middle
16 Ramicauls 3-7 cm long; leaf 3-4 cm long; petals with upper lobe oblong, rounded; lip with blades subequal to column in length..... *L. nautilus*
16′ Ramicauls 10-15 mm long; leaf 9-12 mm long; petals with lobes narrowly triangular; lip with blades ca. twice as long as column..... *L. chelonion*
12′ Sepals not forming a cup
17 Sepals with margins denticulate, ciliate, irregular, erose, fimbriate, spiculate, or cristate, may be minutely so
18 Lateral sepals caudate
19 Lateral sepals narrowly triangular; lip with blades narrowly oblong..... *L. echidion*
19′ Lateral sepals ovate; lip with blades ovate to elliptical
20 Ovary sulcate; lateral sepals with margins minutely irregular... *L. fonnegrae*
20′ Ovary with ribs spiculate; lateral sepals with margins fimbriate or minutely ciliate

21 Lateral sepals fimbriate, 2-veined..... *L. caudata*
21′ Lateral sepals minutely ciliate, 3-veined..... *L. beatrizae*
18′ Lateral sepals not caudate
22 Dorsal sepal concave
23 Each sepal less than 8 mm long; petals with lower lobe long-acuminate, much longer than upper lobe; column very slender
24 Lip with blades with apices filiform, appendix a minute apiculum ..... *L. ictalurus*
24′ Lip with blades with apices rounded, ciliate, appendix triangular..... *L. nematostele*
23′ Each sepal more than 13 mm long; petals with lower lobe not long-acuminate, lobes subequal in length; column not very slender
25 Flower opening incompletely; lateral sepals deeply connate into a narrowly ovate, bifid synsepal..... *L. pleurothallopsis*
25′ Flower opening completely; lateral sepals concave basally, shallowly connate, long-attenuate..... *L. ionoptera*
22′ Dorsal sepal not concave
26 Petals bifurcate, lobes linear; lip bilobed without blades or with blades poorly developed
27 Sepals ovate, acuminate; lip with lobes subtriangular ..... *L. debedoutii*
27′ Sepals long-acuminate; lip bifurcate with lobes narrowly long-acuminate..... *L. calimae*
26′ Petals transversely bilobed, lobes not linear; lip with blades
28 Lateral sepals ca. 16 mm long; petals glabrous..... *L. tibouchinicola*
28′ Lateral sepals ca. 11 mm long or less; petals pubescent to long-ciliate
29 Petals long-ciliate; column with a protruding rostellar flap..... *L. lingulosa*
29′ Petals pubescent; column without a protruding rostellar flap
30 Sepals each ca. 2.5 mm long; petals with upper lobe truncate... *L. acarina*
30′ Sepals each ca. 5 mm long or more; petals with upper lobe not truncate
31 Pedicels 0.5 mm long; lip with appendix with apical process ..... *L. brevipedicellata*
31′ Pedicels 1.5-3.5 mm long; lip with appendix lacking an apical process ..... *L. norae*
17′ Sepals with margins smooth
32 Lateral sepals long-caudate
33 Petals with upper lobe much longer than lower lobe; lip with blades narrowly linear-triangular, acute, acuminate ..... *L. mirabilis*
33′ Petals with lobes subequal in length; lip with blades oblong with bases truncate ..... *L. helgae*
32′ Lateral sepals not long-caudate
34 Lateral sepals connate ¾ their length or more
35 Synsepal acute, triangular..... *L. isochila*
35′ Synsepal ovate to broadly ovate, shortly bifid
36 Petals with lower lobe narrowly triangular, longer than upper lobe; lip with blades narrowly oblong with apices acute ..... *L. amplior*
36′ Petals with lower lobe oblong, shorter or subequal to upper lobe; lip with blades oblong with apices rounded
37 Synsepal at least as wide as long; lip with blades convex, apices long-ciliate..... *L. matisii*
37′ Synsepal longer than wide; lip with blades concave, apices minutely ciliate..... *L. effusa*

34′ Lateral sepals connate ca. half their length or less
38 Lateral sepals long-acuminate, 14-24 mm long, apices approximate ..... *L. ionoptera*
38′ Lateral sepals not long-acuminate, 12 mm or less long, apices diverging
39 Petals with lobes subequal
40 Petals with lobes diverging ca. 90°, deeply bifurcate..... *L. didactyla*
40′ Petals with lobes transverse, not deeply bifurcate
41 Sepals narrowly triangular, laterals 3-veined; lip minute..... *L. isosceles*
41′ Sepals not narrowly triangular, laterals 2-veined; lip as long or longer than the column
42 Petals as wide as the length of a sepal ..... *L. conchyliata*
42′ Petals narrower than the length of a sepal
43 Petals connate above base of column; lip with connectives narrow; column with base dilated ..... *L. marthae*
43′ Petals connate at base of column; lip with connectives cuneate; column with base not dilated
44 Sepals very shortly caudate; lip with apices acute..... *L. boyacensis*
44′ Sepals not caudate; lip with apices obtuse
45 Petals oblong-triangular, narrowed above the bases..... *L. tamaensis*
45′ Petals oblong-triangular, not narrowed above the bases..... *L. norae*
39′ Petals with lobes dissimilar
46 Petals with lobes subequal in length
47 Sepals each ca. 10 mm long; petals pubescent..... *L. exaltata*
47′ Sepals each ca. 5 mm long; petals glabrous..... *L. clausa*
46′ Petals with upper lobe longer than lower lobe
48 Lip with blades twice as long as column, blades narrowly falcate..... *L. edwardsii*
48′ Lip with blades subequal to column in length, blades broadly ovate..... *L. imposita*
8′ Plants medium to large in size, ramicauls more than 5 cm long
49 Lateral sepals with margins denticulate, ciliate, spiculate, or erose, may be minutely so
50 Petals with lobes subequal
51 Sepals each at least 14 mm long, dorsal sepal concave
52 Flower opening incompletely; lateral sepals deeply connate into a narrowly ovate, bifid synsepal ..... *L. pleurothallopsis*
52′ Flower opening completely; lateral sepals long-attenuate, shallowly connate..... *L. ionoptera*
51′ Sepals each 10 mm or less long, dorsal sepal not concave
53 Leaf narrowly ovate, to 3.5 cm wide; synsepal ovate..... *L. illex*
53′ Leaf ovate, to 5.5 cm wide; synsepal triangular..... *L. rhombipetala*
50′ Petals with lobes dissimilar
54 Sepals forming a concave cup
55 Lateral sepals connate nearly to the apices, glabrous..... *L. nautilis*
55′ Lateral sepals connate less than half their length, pubescent..... *L. chimaera*
54′ Sepals not forming a concave cup
56 Petals with upper lobe very short, lower lobe much longer, long-acuminate; lip with apices long-filiform ..... *L. ictalurus*
56′ Petals with upper lobe longer than lower lobe; lip with apices not filiform
57 Petals with both lobes subcircular, upper lobe much larger than lower lobe; lip with blades much shorter than column ..... *L. biglomeris*

57′ Petals with neither lobe subcircular; lip with blades subequal in length to the column
58 Lateral sepals connate for more than half their length; petals with upper lobe oblong with apex rounded.....*L. guanacasensis*
58′ Lateral sepals connate half their length or less; petals with upper lobe not oblong with apex rounded
59 Ovary irregularly carinate-lacerate; petals convex with recurved margins, upper lobe ovoid, subacute, lower lobe uncinate, acute..*L. ostraconopetala*
59′ Ovary sulcate; petals with upper lobe oblong with apex obliquely narrowed, lower lobe obliquely triangular..... *L. muscula*
49′ Lateral sepals with margins smooth
60 Lateral sepals nearly completely connate into a synsepal, at most very shortly bifid
61 Lip with blades concave, with connectives narrow, obliquely backward from blades to base of column..... *L. effusa*
61′ Lip with blades not concave, with connectives cuneate, not obliquely backward
62 Sepals each 16-18 mm long; dorsal sepal flat..... *L. pastoënsis*
62′ Sepals each 7-8 mm long; dorsal sepal concave ..... *L. deliciasensis*
60′ Lateral sepals not nearly completely connate
63 Flower exceptionally large, lateral sepals 14-22 mm long..... *L. ionoptera*
63′ Flower not exceptionally large, lateral sepals 11 mm or less long
64 Petals with lobes subequal
65 Petals with lobes oblong with apices rounded; lip with blades poorly developed..... *L. argentata*
65′ Petals with lobes more or less triangular; lip with blades well developed
66 Ramicauls with sheaths glabrous; inflorescence at most reaching the apex of the leaf.....*L. bitriangularis*
66′ Ramicauls with sheaths minutely scabrous or ciliate; inflorescence eventually greatly exceeding the leaf
67 Peduncle 3-4 cm long; sepals microscopically pubescent..... *L. jardinensis*
67′ Peduncle 1-2 cm long; sepals glabrous.....*L. biloba*
64′ Petals with lobes dissimilar
68 Petals with upper lobes subcircular, overlapping above column; lip with blades glabrous .....*L. imbricans*
68′ Petals with upper lobes oblong or triangular, may be narrowly so, not overlapping above column; lip with blades pubescent
69 Lip with blades connected at their bases with narrow, obliquely backwards connectives to base of column..... *L. effusa*
69′ Lip not as above
70 Lip with blades much shorter than the column
71 Lateral sepals connate to the middle; petals with lobes narrowly triangular, acute, inserted above the base of the column..... *L. oxypetala*
71′ Lateral sepals nearly free; petals with lobes triangular-oblong, obtuse, inserted at the base of the column..... *L. carrilloi*
70′ Lip with blades subequal to column in length
72 Peduncle longer than the leaf; petals with upper lobe long-acuminate.....*L. elongata*
72′ Peduncle shorter than leaf; petals with upper lobe with apex obliquely narrowed ..... *L. muscula*

## Key II: Inflorescence congested; unusual leaves

1 Leaf microscopically pubescent to ciliate
2 Leaf deeply sulcate
3 Lip with blades narrowly oblong, apices long-ciliate, appendix tridentate ..... *L. cincinnata*
3′ Lip with blades oblong, minutely ciliate, appendix a small triangle.. *L. manabina*
2′ Leaf not deeply sulcate
4 Lateral sepals caudate
5 Lateral sepals with caudae 0.5-1 mm long..... *L. ortiziana*
5′ Lateral sepals with caudae at least 2 mm long
6 Leaf ovate-cordate, obtuse; lateral sepals with caudae abruptly everted ..... *L. dodsonii*
6′ Leaf ovate to elliptical-ovate, acute; lateral sepals not with caudae everted
7 Lateral sepals abruptly contracted into caudae ca. 5 mm long..... *L. foreroi*
7′ Lateral sepals acuminate into caudae 2-3 mm long ..... *L. tomentosa*
4′ Lateral sepals not caudate
8 Leaf corrugated; petals with a small filament from the margin near the middle ..... *L. corrugata*
8′ Leaf not corrugated; petals without a small filament
9 Leaf with apex long-acuminate, as long as the blade; petals with upper lobe obliquely truncate, much shorter than lower lobe..... *L. impotens*
9′ Leaf with apex acute; petals with upper lobe oblong, equal in length to lower lobe ..... *L. smaragdina*
1′ Leaf glabrous
10 Leaf narrowly linear to elliptical-linear
11 Leaf canaliculate; petals with a filamentous midlobe..... *L. canaliculata*
11′ Leaf not canaliculate; petals without a filamentous midlobe
12 Ramicauls 10-25 mm long; ovary long-spiculate; lateral sepals with apices approximate ..... *L. gustavoi*
12′ Ramicauls 4-5 cm long; ovary sulcate; lateral sepals with apices diverging..... *L. aciculifolia*
10′ Leaf not narrowly linear
13 Leaf with margins undulate, crenulate, or crenulate-erose
14 Leaf heavily reticulated with purple; sepals strongly reflexed..... *L. calodictyon*
14′ Leaf not heavily reticulated with purple; sepals not reflexed
15 Leaf to 1 cm long, margins crenulate-erose; sepals long-caudate..... *L. limbata*
15′ Leaf longer than 1 cm, margins undulate; sepals not caudate
16 Petals with upper lobe truncate, lower lobe triangular, acute; lip attached with long claw, blades glabrous..... *L. troxis*
16′ Petals with lobes oblong, obtuse; lip with body broad, connate to base of column, blades with margins long-ciliate..... *L. jubata*
13′ Leaf with margins not undulate, crenulate or crenulate-erose
17 Leaf subcircular, shortly acuminate..... *L. refracta*
17′ Leaf more or less ovate
18 Petals 3-lobed, with lobes linear..... *L. aguirrei*
18′ Petals transversely bilobed, lobes not linear
19 Petals with lobes caudate; lip bilobed without blades..... *L. calodictyon*
19′ Petals with upper lobe oblong, lower lobe narrowly triangular; lip with oblong blades..... *L. reticulata*

## Key III: Inflorescence congested; petals with 3 or 4 lobes

1 Plants small, ramicauls usually 5 cm or less long
2 Petals with 4 lobes
3 Dorsal sepal acutely reflexed, lateral sepals nearly free; petals with lobes bifurcate into narrowly linear-triangular segments..... *L. alcicornis*
3′ Dorsal sepal not acutely reflexed, lateral sepals completely connate; petals with filamentous segments..... *L. octopus*
2′ Petals with 3 lobes, one of which may be a marginal process or apiculum
4 Petals with lower lobe shallowly bifurcate; lip without blades..... *L. cyclochila*
4′ Petals not with lower lobe shallowly bifurcate; lip with blades well developed
5 Petals deeply trifurcate
6 Petals with middle lobe the largest and longest; lip with blades glabrous ..... *L. trinaria*
6′ Petals not with middle lobe the largest and longest; lip with blades pubescent to ciliate
7 Pedicels 5-6 mm long; lateral sepals nearly completely connate..... *L. skeleton*
7′ Pedicels 3 mm or less long; lateral sepals shallowly connate
8 Sepals caudate; petals with only upper lobe ciliate..... *L. aguirrei*
8′ Sepals not caudate; petals with all lobes ciliate
9 Leaf ovate; lip with appendix ovoid, apex bilobulate..... *L. hexapus*
9′ Leaf narrowly ovate; lip with appendix filiform, recurved..... *L. heptapus*
5′ Petals not deeply trifurcate
10 Lateral sepals with margins smooth
11 Lateral sepals connate nearly to the apices into a broadly ovate synsepal; petals with upper lobe truncate, lower lobe triangular
12 Petals with upper lobe obliquely truncate; lip with blades not adherent medially ..... *L. andrenoglossa*
12′ Petals with upper lobe sharply truncate with angles shortly acuminate; lip with blades adherent medially ..... *L. mucronata*
11′ Lateral sepals connate half their length; petals with both lobes oblong, truncate ..... *L. sinuosa*
10′ Lateral sepals with margins denticulate or ciliate, may be microscopically or minutely so
13 Lateral sepals completely connate or nearly so
14 Lateral sepals completely connate; petals with middle lobe slender, arcuate..... *L. phalloides*
14′ Lateral sepals connate nearly to their apices; petals with middle lobe small, triangular or erect..... *L. satyrica*
13′ Lateral sepals connate ca. half their length or less
15 Sepals each ca. 1 cm long, pubescent within..... *L. diabolica*
15′ Sepals each 6 mm or less long, glabrous
16 Petals with upper lobe truncate
17 Petals pubescent
18 Sepals obtuse; petals with middle lobe a minute lobule..... *L. fibulifera*
18′ Sepals acute; petals with middle lobe a slender process
19 Petals with upper lobe longer, broader than lower; lip with blades glabrous..... *L. pyramidalis*
19′ Petals with lower lobe longer, narrower than upper; lip with blades ciliate..... *L. dryades*
17′ Petals glabrous or at most cellular-pubescent

20 Pedicels 3.5 mm long; dorsal sepal smooth-margined..... *L. habenifera*
20′ Pedicels 1.5 mm long; dorsal sepal minutely denticulate..... *L. quandi*
16′ Petals with upper lobe not truncate
21 Flower not opening widely; dorsal sepal 5-veined; petals with upper lobe narrowly oblong..... *L. ectopa*
21′ Flower fully expanded; dorsal sepal 3-veined; petals with upper lobe triangular
22 Leaf canaliculate; lateral sepals with apices in apposition.... *L. canaliculata*
22′ Leaf ovate; lateral sepals with apices diverging slightly..... *L. dryades*
1′ Plants medium to large in size, ramicauls usually exceeding 7 cm
23 Lateral sepals with margins smooth
24 Lateral sepals connate nearly to their apices into an ovate, bifid synsepal
25 Petals with upper lobe sharply truncate, middle lobe slender, protruding; lip with blades minutely ciliate ..... *L. mucronata*
25′ Petals with upper lobe ovate, middle lobe a minute lobule; lip with blades glabrous ..... *L. meleagris*
24′ Laterals sepals connate ca. half their length or less
26 Petals with upper lobe truncate, may be obliquely so
27 Petals with lower lobe narrowly falcate-triangular
28 Petals with middle lobe uncinate; lip with body large, saccate..... *L. ollaris*
28′ Petals with middle lobe setiform; lip not with body large, saccate
29 Sepals broadly ovate; petals with lobes subequal in length; column entire with 1-lobed stigma ..... *L. macrantha*
29′ Sepals ovate; petals with lower lobe much longer than upper; column bifurcate with bilobed stigma..... *L. posadae*
27′ Petals with lower lobe not narrowly falcate-triangular
30 Petals indented between lobes, lower lobe triangular, middle lobe filiform..... *L. praemorsa*
30′ Petals not indented between lobes, lower lobe oblong or narrowly triangular, middle lobe not filiform
31 Petals with lower lobe truncate, middle lobe a minute apiculum; lip with blades ovate, apices acute ..... *L. aristata*
31′ Petals with lower lobe narrowly triangular, middle lobe narrow, linear; lip with blades oblong, apices truncate ..... *L. pilosiaures*
26′ Petals with upper lobe acute to obtuse
32 Petals with upper lobe oblong-ovate; lip with blades shallowly concave..... *L. foveata*
32′ Petals with both lobes triangular, acute; lip with blades not shallowly concave
33 Petals with a minute marginal lobule between the lobes; lip with blades adherent medially..... *L. umbonata*
33′ Petals with a small marginal filament between the lobes; lip with blades not adherent medially..... *L. corrugata*
23′ Lateral sepals with margins denticulate or ciliate, may be microscopically so
34 Dorsal sepal ca. 1 cm long
35 Dorsal sepal 5-veined, lateral sepals 3-veined..... *L. ophelma*
35′ Dorsal sepal 3-veined, lateral sepals 2-veined
36 Sepals ovate, glabrous within; lip with blades lunate with bases incurved, convex..... *L. spelynx*
36′ Sepals acuminate, pubescent within; lip with blades elliptical with bases obtuse..... *L. diabolica*

34′ Dorsal sepal less than 8 mm long
37 Lip with blades glabrous
38 Petals with middle lobe uncinate
39 Lateral sepals with apices diverging ca. 90°; petals with upper lobe rounded ..... *L. myoxophora*
39′ Lateral sepals with apices diverging less than 90°; petals with upper lobe truncate ..... *L. janitor*
38′ Petals with middle lobe a small marginal lobule
40 Leaf 5-8 cm long; lateral sepals 3 mm long, connate nearly to their apices ..... *L. meleagris*
40′ Leaf 4-5 cm long; lateral sepals 5 mm long, connate less than half their length ..... *L. parmata*
37′ Lip with blades minutely pubescent or ciliate
41 Lateral sepals each less than 4 mm long
42 Petals with upper lobe longer than lower lobe, middle lobe slender, 1 mm long ..... *L. heteroloba*
42′ Petals with lobes subequal in length, middle lobe a small apiculum
43 Petals with upper lobe broadly oblong; lip with appendix hinged, saccate ..... *L. saccata*
43′ Petals with upper lobe truncate or triangular; lip with appendix not saccate
44 Petals with upper lobe truncate, lower lobe acutely triangular ..... *L. cactoura*
44′ Petals with upper lobe broadly triangular, obtuse, lower lobe oblong ..... *L. subulata*
41′ Lateral sepals each more than 5.5 mm long
45 Petals with middle lobe a slender, horizontal process; lip with connectives cuneate ..... *L. hortensis*
45′ Petals with middle lobe a descending process; lip with connectives narrow, oblique
46 Lip with blades adherent medially, appendix 1 mm long ..... *L. agglutinata*
46′ Lip with blades not adherent medially, appendix 0.4 mm long ..... *L. anemica*

## Key IV: Inflorescence congested; 3-veined lateral sepals

1 Ramicauls usually 5 cm or less long
2 Sepals strongly reflexed; petals with upper lobe larger than lower ... *L. viahoënsis*
2′ Sepals not reflexed; petals with lower lobe much longer than upper ..... *L. oxybaphon*
1′ Ramicauls usually longer than 5 cm
3 Petals with lobes subequal in size, both lobes narrowly oblong ..... *L. ligiae*
3′ Petals with upper lobe longer than lower, upper lobe narrowly triangular
4 Sepals smooth-margined, lateral sepals pubescent, 7-9.5 mm long; petals with lower lobe triangular ..... *L. callisto*
4′ Sepals denticulate, lateral sepals glabrous, 4 mm long; petals with lower lobe narrowly triangular ..... *L. bipinnatula*

## Key V: Inflorescence congested; plants small, ramicauls 5 cm long or less

1 Lateral sepals with margins denticulate or ciliate, may be minutely so
2 Lateral sepals caudate
3 Petals with lower lobe longer than upper
4 Dorsal sepal concave; lip with blades with erect, acute lobes.....*L. lycocephala*
4′ Dorsal sepal flat; lip bilobed, subcordate.....*L. pictoris*
3′ Petals with upper lobe as long as or longer than lower lobe
5 Petals with both lobes long-ciliate; lip with a large, pubescent protuberance ..... *L. hirsutula*
5′ Petals not with both lobes long-ciliate; lip with appendix small
6 Lateral sepals with caudae abruptly everted ..... *L. dodsonii*
6′ Lateral sepals not with caudae abruptly everted
7 Lateral sepals abruptly contracted into caudae
8 Leaf densely pubescent; lateral sepals with caudae much longer than the blades .....*L. foreroi*
8′ Leaf glabrous; lateral sepals with caudae shorter than the blade.....*L. venusta*
7′ Lateral sepals gradually acuminate into caudae
9 Lateral sepals ca. 9 mm long; petals with upper lobe narrowly oblong..... *L. eucerca*
9′ Lateral sepals ca. 4 mm long; petals with upper lobe oblong, truncate with rounded corners..... *L. chocoënsis*
2′ Lateral sepals not caudate
10 Lateral sepals nearly completely connate
11 Dorsal sepal concave; petals with lobes narrowly linear-triangular, long-ciliate .....*L. satyrica*
11′ Dorsal sepal flat; petals with lobes triangular, minutely pubescent .....*L. deficiens*
10′ Lateral sepals not nearly completely connate
12 Petals wider than the length of the dorsal sepal
13 Lateral sepals obtuse
14 Petals linear, wider than the length of the dorsal and lateral sepals combined..... *L. tetracola*
14′ Petals not linear, narrower than the length of the dorsal and lateral sepals combined
15 Petals with lower lobe longer than upper lobe, ciliate; lip with blades a membranous veil over the column.....*L. deformis*
15′ Petals with lower lobe shorter than upper lobe, not ciliate; lip with blades not a thin veil
16 Petals with upper lobe obliquely truncate; lip with apices ciliate ..... *L. dolabrata*
16′ Petals with upper lobe oblong; lip with margins long-ciliate.....*L. jubata*
13′ Lateral sepals acute
17 Sepals free, dorsal sepal obovate; petals caudate..... *L. calodictyon*
17′ Sepals shallowly connate, dorsal sepal broadly ovate; petals not caudate
18 Petals with upper lobe oblong-falcate, everted, lower lobe oblong-triangular; lip with blades ..... *L. tracheia*
18′ Petals with lobes ovate, oblique; lip thick, pyramid-shaped, without blades.....*L. stelidilabia*
12′ Petals narrower or equal to the length of the dorsal sepal

19 Petals with lower lobe longer than upper lobe
20 Sepals obtuse; lip with blades broadly elliptical below middle, narrow above..... *L. dumbo*
20′ Sepals acute; lip with blades elliptical
21 Sepals each 4 mm long; petals long-pubescent..... *L. alkaia*
21′ Sepals each 8 mm long; petals microscopically pubescent..... *L. solicitor*
19′ Petals with upper lobe as long or longer than lower lobe
22 Petals with upper lobe longer than lower lobe
23 Lateral sepals nearly free..... *L. acrogenia*
23′ Lateral sepals more deeply connate
24 Petals with lower lobe narrowly triangular
25 Sepals obtuse; petals with upper lobe oblong..... *L. reticulata*
25′ Sepals acute; petals with upper lobe very narrowly triangular..... *L. antennifera*
24′ Petals with lower lobe oblong to oblong-triangular
26 Ovary long-spiculate; lateral sepals with apices approximate..... *L. gustavoi*
26′ Ovary sulcate; lateral sepals with apices diverging
27 Pedicels 3 mm long; petals with lobes narrowly oblong..... *L. scopulifera*
27′ Pedicels ca. 1 mm long; petals with lobes oblong..... *L. plectilis*
22′ Petals with lobes subequal in length
28 Lateral sepals acute
29 Leaf 15 mm long or less; petals with apices everted..... *L. confusa*
29′ Leaf 2 cm long or more; petals with apices not everted
30 Leaf with blade linear; petals with apices not incurved..... *L. aciculifolia*
30′ Leaf with blade ovate; petals with apices incurved
31 Sepals each 2.5 mm long; lip U-shaped with thickened lobes..... *L. opetidion*
31′ Sepals each 5.5 mm long; lip with blades oblong..... *L. octavioi*
28′ Lateral sepals obtuse
32 Lip bilobed, subcordate with cleft..... *L. trichocaulis*
32′ Lip with blades
33 Petals with both lobes oblong, rounded, with margin deeply incised; lip with apices long-ciliate..... *L. intonsa*
33′ Petals with upper lobe truncate, lower triangular; lip with apices glabrous..... *L. escifera*
1′ Lateral sepals with margins smooth
34 Petals wider than the length of the dorsal sepal
35 Lateral sepals nearly completely connate
36 Petals with upper lobe obliquely truncate; lip with connectives narrow, oblong..... *L. debilis*
36′ Petals with upper lobe ovate; lip with connectives broadly cuneate... *L. tanekes*
35′ Lateral sepals less deeply connate
37 Lateral sepals obtuse to broadly obtuse to rounded
38 Lateral sepals essentially free
39 Petals with lobes obliquely subquadrate; lip bilobed with apex broadly rounded..... *L. petalopteryx*
39′ Petals with lobes oblique, narrow; lip not bilobed with apex rounded
40 Lip 3-lobed, lateral lobes broadly oblong, middle lobe narrowly triangular..... *L. insolita*
40′ Lip transversely oblong with apex apiculate..... *L. georgii*
38′ Lateral sepals not essentially free

41 Petals with lobes narrowly triangular; lip with blades triangular.... *L. anserina*
41′ Petals with upper lobe not narrowly triangular; lip with blades not triangular
42 Petals with lobes oblong, rounded ..... *L. hirpex*
42′ Petals with upper lobe truncate
43 Leaf narrowly ovate; petals with lower lobe triangular; lip with blades shorter than column ..... *L. cerambyx*
43′ Leaf broadly elliptical-ovate; petals with lower lobe obliquely ovate; lip with blades subequal to column in length..... *L. dasyura*
37′ Lateral sepals acute
44 Petals with lobes subequal
45 Petals with lobes triangular to falcate
46 Petals with lobes falcate-incurved; lip with body narrow..... *L. larvina*
46′ Petals with lobes triangular; lip with body broad
47 Dorsal sepal broadly ovate, obtuse; lateral sepals connate ca. half their length; lip with appendix long, conspicuous..... *L. hubeinii*
47′ Dorsal sepal ovate, acute; lateral sepals shallowly connate; lip with appendix minute..... *L. zapatae*
45′ Petals with lobes narrowly linear, oblong or triangular
48 Sepals reflexed; lip bilobed, cordate..... *L. culex*
48′ Sepals not reflexed; lip with blades
49 Sepals each ca. 3 mm long; lip with blades with base broadly truncate ..... *L. roezliana*
49′ Sepals each 5 mm or more long; lip with blades with bases rounded
50 Lip with blades ovate, subequal to column in length..... *L. petalolenta*
50′ Lip with blades narrowly elliptical, shorter than protruding column ..... *L. valenciae*
44′ Petals with lobes dissimilar
51 Sepals reflexed; lip bilobed, cordate..... *L. pleurorachis*
51′ Sepals not reflexed; lip with blades
52 Leaf equally long and wide
53 Petals with upper lobe ovate, acute; lip with bases subtruncate, apices acute..... *L. cordata*
53′ Petals with upper lobe oblong; lip with bases rounded, apices broadly falcate, incurved..... *L. forceps*
52′ Leaf longer than wide
54 Petals with lobes filamentous; lip connate to column above middle ..... *L. ramosii*
54′ Petals with lobes not filamentous; lip connate to column at base
55 Dorsal sepal oblong with apex rounded; petals with lower lobe oblong ..... *L. aures-asini*
55′ Dorsal sepal broadly ovate, subacute; petals with lower lobe more or less triangular
56 Lip with blades narrowly elliptical, minutely pubescent ..... *L. cogolloi*
56′ Lip with blades broadly elliptical, long-ciliate..... *L. penicillifera*
34′ Petals equal to or narrower than the length of the dorsal sepal
57 Lip without blades
58 Lateral sepals connate ca. half their length or more
59 Column straight; petals with lobes filamentous..... *L. nematodes*
59′ Column decurved; petals with lobes oblong or narrowly triangular
60 Petals with lobes oblong, obtuse; lip with lobes obtuse with appendix small, oblong..... *L. yubarta*

60′ Petals with lobes narrowly triangular, acute; lip with lateral lobes triangular, anterior lobe ligulate ..... *L. pterygion*
58′ Sepals shallowly connate or free
61 Sepals reflexed
62 Petals with lower lobe truncate; lip H-shaped..... *L. microscopica*
62′ Petals with lower lobe triangular; lip not H-shaped
63 Lateral sepals with apices obtuse; lip transversely bilobed with apex retuse..... *L. refracta*
63′ Lateral sepals with apices acute; lip subcordate with apex broadly rounded..... *L. giraldoi*
61′ Sepals not reflexed
64 Petals filiform to narrowly triangular
65 Sepals with apices acute; petals bifurcate, filiform..... *L. hyphosa*
65′ Sepals with apices shortly acuminate; petals transversely narrowly triangular..... *L. strumosa*
64′ Petals transversely bilobed-oblong
66 Peduncle longer than the leaf; lip with 3 acute lobes, middle lobe longest, longer than the column ..... *L. golondrina*
66′ Peduncle shorter than the leaf; lip cordate, minute, with apex acute..... *L. micellilabia*
57′ Lip with blades weakly to completely developed
67 Sepals caudate
68 Petals with upper lobe oblong, rounded, lower lobe triangular, narrowly obtuse..... *L. discolor*
68′ Petals with lobes triangular, acute
69 Sepals ovate, subacute ..... *L. limbata*
69′ Sepals broadly ovate, obtuse..... *L. tsubotae*
67′ Sepals not caudate
70 Petals with lobes subequal
71 Petals glabrous
72 Lateral sepals narrowly ovate, 8 mm long..... *L. stellaris*
72′ Lateral sepals ovate, 5 mm or less long
73 Inflorescence longer than leaf, long-pedunculate; sepals acute ..... *L. aperta*
73′ Inflorescence shorter than leaf; sepals obtuse..... *L. atomifera*
71′ Petals pubescent, may be minutely so
74 Lip with blades concave
75 Lip with blades with apices truncate, appendix cymbiform..... *L. wageneri*
75′ Lip with blades with apices rounded, appendix oblong, concave with a transverse, bilobed, ciliate terminal segment ..... *L. anchorifera*
74′ Lip with blades not concave
76 Petals with lobes cuneate; lip with blades long-ciliate, obovate..... *L. auditor*
76′ Petals with lobes narrowly triangular; lip with blades pubescent, ovate..... *L. sericinitens*
70′ Petals with lobes dissimilar
77 Petals with upper lobe oblong to oblong-ovate, rounded
78 Dorsal sepal narrowly triangular, lateral sepals with apices approximate ..... *L. helicocephala*
78′ Dorsal sepal ovate-triangular, lateral sepals with apices diverging
79 Lip with blades glabrous, narrowly oblong, subequal to column in length ..... *L. popayanensis*

79′ Lip with blades pubescent, ovate-triangular, shorter than column ..... *L. cercion*
77′ Petals with upper lobe with apex truncate or narrowed
80 Sepals obtuse, not reflexed; petals with apex of upper lobe truncate ..... *L. ricaurtensis*
80′ Sepals acute, reflexed; petals with apex of upper lobe narrowed ..... *L. macrostylis*

Key VI: Inflorescence congested; plants medium in size, ramicauls 5-10 cm long

1 Growth habit prolific
2 Sepals with margins denticulate, lateral sepals with apices diverging..... *L. prolifera*
2′ Sepals smooth-margined, lateral sepals with apices approximate..... *L. oreibates*
1′ Growth habit caespitose
3 Lateral sepals with margins denticulate or ciliate, may be minutely so
4 Petals with lobes subequal
5 Sepals caudate
6 Sepals with caudae curving inward; lip with blades narrowly oblong..... *L. cincinnata*
6′ Sepals with caudae not curving inward; lip with blades oblong-ovate..... *L. tomentosa*
5′ Sepals not caudate
7 Petals with lower lobe oblong
8 Lateral sepals connate ca. half their length; lip with blades semicircular, adherent above column..... *L. subulata*
8′ Lateral sepals connate less then one-quarter their length; lip with blades elliptical-oblong, not adherent above the column..... *L. aquila-borussiae*
7′ Petals with lower lobe triangular, may be narrow or obtuse
9 Lateral sepals connate less than half their length
10 Ramicauls very stout; petals with upper lobe oblong with apex more or less contracted; lip with blades pubescent, oblong ..... *L. dunstervilleorum*
10′ Ramicauls slender; petals with upper lobe oblong; lip with blades glabrous, narrowly oblong..... *L. smaragdina*
9′ Lateral sepals connate more than half their length
11 Lip with appendix large, hinged, flap-like, with apical portion concave, ciliate ..... *L. oscillifera*
11′ Lip with appendix small, pedunculate, oblong ..... *L. deficiens*
4′ Petals with lobes dissimilar
12 Petals with upper lobe much longer than lower
13 Lateral sepals completely connate into a subcircular synsepal with a shortly acuminate apex ..... *L. dicyrtopetala*
13′ Lateral sepals not completely connate
14 Dorsal sepal concave; lip with blades with apices long-acuminate
15 Lateral sepals narrowly triangular; petals with upper lobe shorter than the dorsal sepal ..... *L. elephantina*
15′ Lateral sepals ovate; petals with upper lobe longer than the dorsal sepal..... *L. antennata*
14′ Dorsal sepal not concave; lip with blades with apices rounded, may be narrowly so

16 Leaf with long-acuminate tip as long as the blade; petals with upper lobe longer than a sepal ..... *L. gelata*
16′ Leaf without a linear acumen; petals with upper lobe shorter than a sepal
17 Leaf with base deflexed; petals with upper lobe subcircular ..... *L. vellicata*
17′ Leaf with base not deflexed; petals with upper lobe narrowly triangular
18 Sepals each 5-6 mm long; petals with lower lobe broadly triangular, obtuse..... *L. mirador*
18′ Sepals each 9 mm long; petals with lower lobe narrowly triangular, acute..... *L. silverstonei*
12′ Petals with lower lobe as long or longer than upper lobe
19 Pedicels 3-4 mm long; petals with lobes obliquely triangular .. *L. cacique-tone*
19′ Pedicels 1.5 mm or less long; petals with upper lobe truncate or obtuse
20 Lateral sepals caudate
21 Lateral sepals with caudae 0.5-1 mm long; petals glabrous..... *L. ortiziana*
21′ Lateral sepals with caudae 4-6 mm long, incurved; petals minutely pubescent ..... *L. manabina*
20′ Lateral sepals not caudate
22 Petals with lower lobe much longer than upper
23 Sepals acute; lip lacking appendix..... *L. impotens*
23′ Sepals acuminate; lip with elaborate, hinged appendix ..... *L. solicitor*
22′ Petals with lobes subequal in length
24 Lip with blades thick, body connate to base of column..... *L. escifera*
24′ Lip with blades thin, body attached to column with slender claw
25 Lip with blades lunate, entire..... *L. transparens*
25′ Lip with blades elliptical, notched towards apices..... *L. troxis*
3′ Lateral sepals with margins smooth
26 Petals with lobes subequal
27 Petals with lobes subcircular
28 Sepals each 7 mm long, dorsal sepal triangular, acute, laterals subacute ..... *L. ballatrix*
28′ Sepals each 4 mm long, dorsal sepal broadly ovate, obtuse, laterals obtuse, abruptly apiculate..... *L. binaria*
27′ Petals with lobes triangular or oblong
29 Petals with lobes oblong
30 Sepals obtuse; petals with upper lobes overlapping..... *L. caesariata*
30′ Sepals acute; petals with upper lobes not overlapping..... *L. guttula-sanguinis*
29′ Petals with lobes triangular
31 Sepals acute, acuminate; lip with blades ovate ..... *L. affinis*
31′ Sepals obtuse, apiculate; lip with blades broadly elliptical..... *L. planadensis*
26′ Petals with lobes dissimilar
32 Petals with each lobe longer than the length of a sepal..... *L. dewildei*
32′ Petals with each lobe shorter than the length of a sepal
33 Petals with lower lobe more or less triangular to falcate
34 Petals with upper lobe more or less triangular to falcate
35 Leaf with blade ca. as wide as long
36 Leaf subcircular, reticulated; sepals acutely reflexed ..... *L. refracta*
36′ Leaf broadly transversely cordate; sepals not acutely reflexed..... *L. rutrum*
35′ Leaf with blade longer than wide
37 Sepals each 16 mm long, pubescent, laterals caudate..... *L. stupenda*
37′ Sepals each 8 mm or less long, glabrous, laterals more or less acute

38 Lip with blades glabrous
39 Lip with blades poorly developed, much shorter than and exposing the column ..... *L. anatina*
39′ Lip with blades well developed, as long as the column and adherent medially ..... *L. umbonata*
38′ Lip with blades pubescent
40 Petals with upper lobe obliquely falcate, much longer than broadly triangular lower lobe ..... *L. cocculifera*
40′ Petals with upper lobe obliquely triangular, shorter than falcate lower lobe ..... *L. aduncata*
34′ Petals with upper lobe not more or less triangular to falcate
41 Petals with upper lobe truncate, may be obliquely so
42 Sepals each 5-7 mm long; lip attached to column with a long, slender claw ..... *L. contingens*
42′ Sepals each 2-3.5 mm long; lip with body connate at base of column
43 Leaf obovate; sepals acute ..... *L. obovata*
43′ Leaf narrowly ovate; sepals obtuse ..... *L. micronyx*
41′ Petals with upper lobe rounded
44 Sepals obtuse
45 Leaf broadly elliptical; sepals each 5.5 mm long, dorsal sepal 5-veined ..... *L. cunicularis*
45′ Leaf narrowly ovate; sepals each less than 2.5 mm long, dorsal sepal 3-veined ..... *L. perdita*
44′ Sepals acute
46 Pedicel plus ovary 6 mm long; lip with bases reflexed ..... *L. declivis*
46′ Pedicel plus ovary 3 mm long; lip with bases not reflexed
47 Inflorescence secund; lip with appendix large, concave, pubescent ..... *L. palaga*
47′ Inflorescence distichous; lip with appendix small, erect, slender ..... *L. setifera*
33′ Petals with lower lobe not more or less triangular to falcate
48 Lateral sepals approximate ..... *L. porracea*
48′ Lateral sepals diverging
49 Leaf deflexed at base; petals transversely reniform ..... *L. troglodytes*
49′ Leaf not deflexed at base; petals not transversely reniform
50 Petals with lower lobe much longer than upper; lip transversely cordate ..... *L. focalis*
50′ Petals with lobes subequal in length; lip with blades ovate ..... *L. monitor*

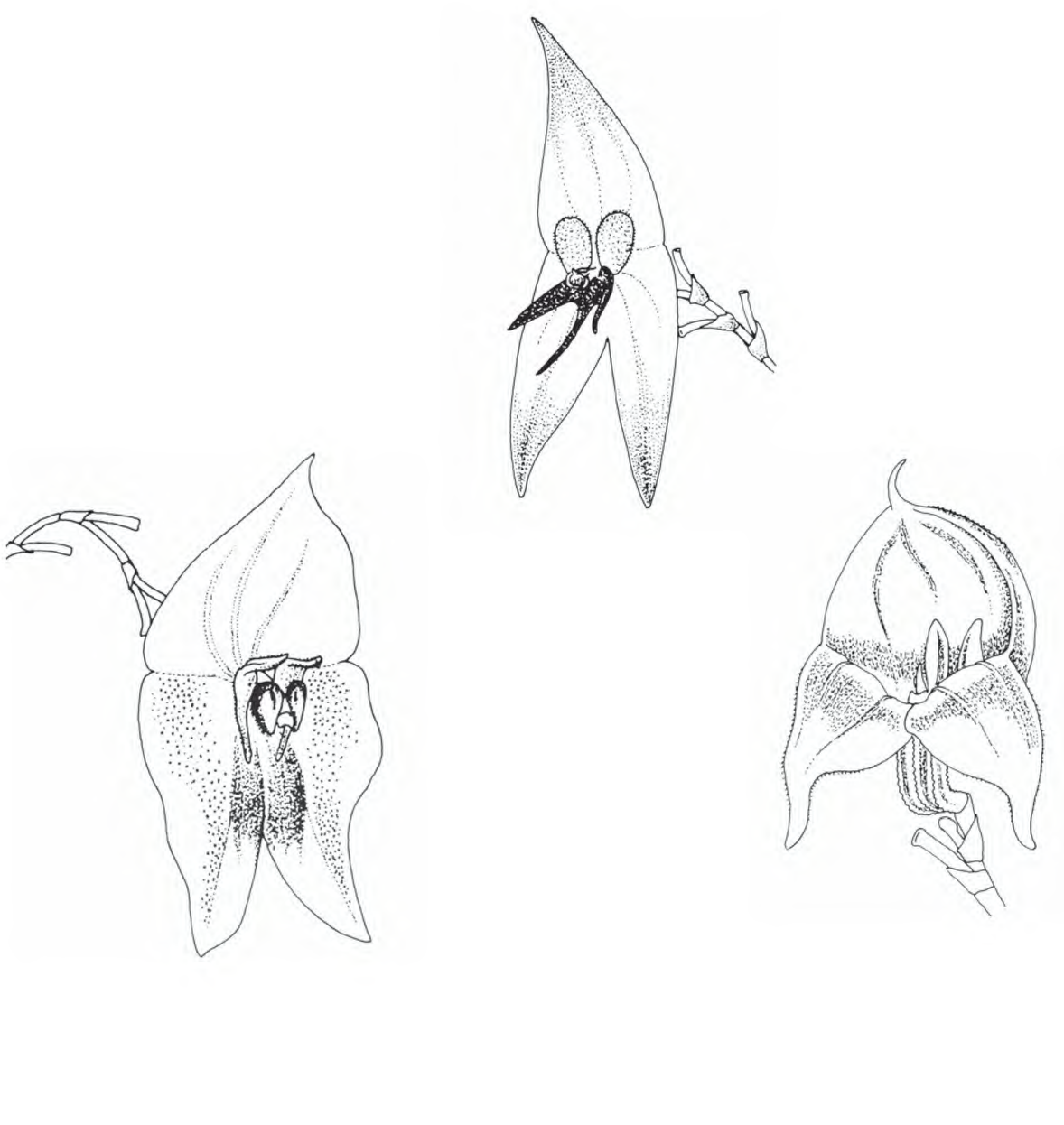
Key VII: Inflorescence congested; plants large, ramicauls 10 cm long or more

1 Habit prolific or repent
2 Habit repent, 1-3 cm between ramicauls ..... *L. repens*
2′ Habit prolific
3 Flowers not opening widely; sepals with long caudae ..... *L. chimaera*
3′ Flowers opening widely; sepals acuminate with apices approximate ..... *L. oreibates*
1′ Habit caespitose
4 Lateral sepals with margins denticulate, ciliate, or erose, may be minutely so
5 Petals with lobes subequal

6 Sepals forming a broad shallow cup ..... *L. hirtzii*
6′ Sepals expanded, flowers more or less flat
7 Petals with lobes triangular; lip with blades with apices long-ciliate ..... *L. rodrigoi*
7′ Petals with lobes oblong; lip with blades with apices glabrous ..... *L. maria-victoriae*
5′ Petals with lobes dissimilar
8 Petals with upper lobe narrowly triangular
9 Sepals pubescent; petals with lower lobe uncinate, recurved ..... *L. nicolasii*
9′ Sepals glabrous; petals with lower lobe more or less triangular
10 Sepals 9 mm long; petals with lower lobe narrowly triangular, acute ..... *L. vibrissa*
10′ Sepals 5-6 mm long; petals with lower lobe broadly triangular, obtuse ..... *L. mirador*
8′ Petals with upper lobe not narrowly triangular
11 Flower cup-shaped; sepals long-caudate ..... *L. chimaera*
11′ Flower more or less flat; sepals not long-caudate
12 Dorsal sepal concave
13 Lateral sepals connate ca. ¾ their length into a concave synsepal; lip attached to base of column with a narrow claw ..... *L. aries*
13′ Lateral sepals very shallowly connate, not concave; lip with body connate to column near base ..... *L. elephantina*
12′ Dorsal sepal more or less flat
14 Petals minutely pubescent
15 Petals with upper lobe oblong, contracted medially with apex narrowed ..... *L. dunstervilleorum*
15′ Petals with upper lobe subcircular ..... *L. vellicata*
14′ Petals glabrous
16 Lateral sepals with apices diverging more than 90°; petals with upper lobe longer than lower lobe, subquadrate ..... *L. uribei*
16′ Lateral sepals with apices diverging less than 90°; petals with lobes subequal in length, upper lobe not subquadrate
17 Sepals ovate, acuminate into very short caudae; petals with upper lobe broadly uncinate, incurved, lower lobe oblong-triangular ..... *L. ortiziana*
17′ Sepals ovate-triangular, acute; petals with upper lobe broadly ovate, lower lobe oblong ..... *L. profusa*
4′ Sepals with margins smooth
18 Petals with lobes subequal
19 Petals with lobes subcircular
20 Sepals each 7 mm long, dorsal sepal triangular, acute, lateral sepals subacute ..... *L. ballatrix*
20′ Sepals each 4 mm long, dorsal sepal broadly ovate, obtuse, lateral sepals abruptly apiculate ..... *L. binaria*
19′ Petals with lobes not subcircular
21 Petals with lobes oblong or oblong-cuneate
22 Lip with blades not carinate, distal half edged with dense, long, spindle-shaped cilia ..... *L. medinae*
22′ Lip with blades carinate, not with distal half edged with dense, long, spindle-shaped cilia
23 Lateral sepals with apices diverging less than 90° ..... *L. steyermarkii*
23′ Lateral sepals with apices diverging more than 90°

24 Lateral sepals obtuse; lip with appendix glabrous, flabellate..... *L. orion*
24′ Lateral sepals acute; lip with appendix pubescent, oblong..... *L. auriculata*
21′ Petals with lobes not oblong or oblong-cuneate
25 Petals with lobes triangular; lip with blades ovate..... *L. affinis*
25′ Petals with lobes ovate, contracted into long-attenuate apices; lip with blades with basal portion subcircular..... *L. volvox*
18′ Petals with lobes dissimilar
26 Petals with lower lobe with apex long-acuminate to filiform
27 Sepals narrowly oblong-ovate, nearly free; petals with lower lobe nearly as long as a sepal, upper lobe vestigial..... *L. alvarezii*
27′ Sepals ovate to broadly ovate, laterals connate ca. half their length; petals not as above
28 Ovary 2 mm long; petals with upper lobe ca. twice as long as lower lobe..... *L. medusa*
28′ Ovary 4-5 mm long; petals with lower lobe longer than upper..... *L. athena*
26′ Petals with lower lobe not with apex long-acuminate to filiform
29 Petals with lower lobe uncinate or falcate, may be narrowly so
30 Lateral sepals with apices approximate; clinandrium with protruding margin lacerate..... *L. lacera*
30′ Lateral sepals with apices diverging; clinandrium with apex not lacerate
31 Petals with lower lobe incurved; column with elongated rostellar projection..... *L. gemina*
31′ Petals with lower lobe recurved; column lacking an elongated rostellar projection..... *L. uncifera*
29′ Petals with lower lobe not uncinate or falcate
32 Petals with upper lobe truncate, lower lobe sigmoid; stigma bifurcate with lobes projecting beyond the column..... *L. furcata*
32′ Petals with upper lobe not truncate, lower lobe triangular or oblong; stigma not bifurcate
33 Petals with lower lobe triangular
34 Petals with upper lobe triangular
35 Lateral sepals diverging ca. 90°; petals with lobes obliquely triangular..... *L. pachoi*
35′ Lateral sepals diverging less than 90°; petals with lobes transversely more or less triangular
36 Sepals pubescent below middle, lateral sepals caudate; lip connate to base of the column..... *L. stupenda*
36′ Sepals glabrous, lateral sepals acute; lip connate above middle of the column..... *L. juan-felipei*
34′ Petals with upper lobe oblong or elliptical
37 Dorsal sepal concave, lateral sepals deeply connate into a concave, bifid synsepal..... *L. aries*
37′ Sepals more or less flat, lateral sepals connate less than half their length
38 Sepals broadly ovate, shortly caudate..... *L. gargantua*
38′ Sepals ovate, not shortly caudate
39 Sepals each ca. 13 mm long, long-acuminate, lateral sepals diverging ca. 90°..... *L. acutissima*
39′ Sepals each ca. 6.5 mm long, short-acuminate, lateral sepals diverging less than 45°..... *L. darioi*
33′ Petals with lower lobe oblong to ovate, may be narrowly so
40 Blades of lip ca. half as long as column..... *L. panope*

40′ Blades of lip and column subequal in length
41 Petals glabrous
42 Sepals with apices diverging more than 90°; petals with lower lobe narrowly oblong, twice as long as upper lobe..... *L. focalis*
42′ Sepals with apices diverging less than 90°; petals not as above
43 Petals with upper lobe ovate-oblong with apex narrowed, everted, lower lobe contracted below middle..... *L. monitor*
43′ Petals with upper lobe broadly ovate, lower lobe oblong, narrowly and obliquely ovate..... *L. caudatisepala*
41′ Petals microscopically pubescent
44 Lip with blades glabrous
45 Petals with upper lobe oblong-ovate, lower lobe narrowly oblong; lip with blades deeply convex, enclosing the column.....*L. cingens*
45′ Petals with lobes ovate with rounded apices; lip with blades more or less flat, above the column.....*L. troglodytes*
44′ Lip with blades microscopically pubescent
46 Lip with appendix broad, triangular, membranous.....*L. deutera*
46′ Lip with appendix small, pedunculated, pubescent.....*L. elata*



## **Lepanthes abortiva** Luer & R. Escobar, Orquideología 18(1): 22-24, 1991.

Ety.: From the Latin *abortivus*, "abortive," referring to the vestigial lip.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 20-35 mm long, enclosed by 7-9 ciliated lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, 11-16 mm long, 9-11 mm wide, the base broadly cuneate into a petiole 1 mm long. **Inflorescence** a loose, successively few-flowered raceme up to 10 mm or more long, borne from the top side of the leaf by a filiform peduncle up to 15 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 1.25 mm long; **sepals** red-brown, glabrous, sharply carinate, narrowly ovate, acute, margins denticulate, the dorsal sepal 6 mm long, 2.75 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, the lateral sepals oblique, 6 mm long, 1.5 mm wide, 2-veined, connate 1 mm; **petals** glabrous, yellow, 1-lobed, erect, narrowly linear, 1 mm long, 0.3 mm wide, with a small angle on the labellar margin above the base; **lip** extremely minute, microscopically pubescent, without blades, connectives or body, apparently reduced to a ligulate structure resembling an appendix, 0.12 mm long, 0.05 mm wide, from the base of the column; **column** comparatively large, terete, 1.25 mm long, the anther dorsal, the stigma apical.

**Colombia:** without collection data, flowered in cultivation at Colomborquídeas, 18 Mar. 1989, *C. Luer 14221* (Holotype: MO).

Unfortunately, the collection data for this species have been lost. It is still possible that a duplicate plant with collection data will flower in the future. This species is unusual in the genus, having narrowly linear, erect, single-lobed petals and an extremely minute lip without any of the usual anatomical features. The Central American *Lepanthes eximia* Ames possesses similar single-lobed, linear petals, although horizontal rather than erect. The lip is not known to have an equal. It is reduced to an extremely minute organ only 0.12 millimeter in length.

At first, C. Luer thought that the lip had been lost or eaten by an insect, but with high power magnification a tiny object could be seen. To confirm or deny his suspicion, he dissected a nearly mature bud. This yielded the same microscopic structure, devoid of lateral lobes, connectives or a body. This vestigial "lip" is attached to the base of the comparatively large column, where it is invisible to the naked eye.

## **Lepanthes acarina** Luer, Phytologia 54(5): 326, 1983.

Ety.: From Acarina, the order of mites, in allusion to the little, red, prickly flowers.

**Plant** minute, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-35 mm long, enclosed by 3-8 closely fitting, microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-ovate, subacute to obtuse, 7-10 mm long, 4-6 mm wide, the rounded base contracted into a petiole ca. 1 mm long. **Inflorescence** a subdense, successively few- to several-flowered raceme 3-10 mm long, borne by a capillary peduncle up to 10 mm long, beyond the apex of the leaf; floral bracts muricate, 1 mm long; pedicels 1 mm long; ovary 1.5 mm long; **sepals** yellow or red, minutely serrulate-ciliate on the margins and carinate externally, the dorsal sepal broadly ovate-triangular, subacute, 2-2.5 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, diverging, 2.5 mm long, 2.5 mm wide together, each 2-veined, connate 1 mm; **petals** red, microscopically pubescent, transversely bilobed, 0.5 mm long, 1.75 mm wide, the upper lobe oblong, oblique, obtusely angled, truncate, the lower lobe smaller, narrowly oblong, subfalcate, obtuse; **lip** red, bilaminate, the blades ovate, subacute, microscopically pubescent, 1 mm long, the connectives cuneate, the body narrow, connate to the base of the column, the sinus obtuse with the appendix bisegmented, pubescent, constricted above the middle with the apical portion deflexed, the basal portion concave; **column** stout, 1 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Cocorná, forest in quebrada near Río Cocorná, alt. 1600 m, 24 Apr. 1983, *C. Luer, R. Escobar, et al. 8810* (SEL); Mun. Frontino, Alto de Cuevas, alt. 2050 m, 14 May 1983, *R. Escobar 2602* (SEL); Mun. Jardín, Alto de Ventanas, alt. 2800 m, 25 May 1983, *R. Escobar 2726* (SEL); Mun. Sonsón, Tres Cruces, alt. 2750 m, 30 Apr. 1983, *C. Luer, R. Escobar, et al. 8903* (SEL); Mun. Yarumal, Alto de Ventanas, alt. 2100 m, 20 May 1983, *R. Escobar 2614* (SEL); in forest remnant east of Santo Domingo, 2170 m, 12 May 1985, *C. Luer, R. Escobar & E. Valencia 11353* (MO); Tres Cruces, collected by Marguerite Webb et al. 1983, flowered in cultivation at J & L Orchids, Easton,

Connecticut, 25 Apr. 1987, *C. Luer 12834* (MO); in forest remnant about 10 km north of Santa Rosa de Osa, above Estadero Manicomio, 2580 m, 14 Mar. 1989, *C. Luer et al. 14149* (MO).

**Norte de Santander:** Mun. Toledo, Alto de Santa Inéz, alt. 2100 m, 23 May 1982, *C. Luer, R. Escobar & D. Portillo 7962* (SEL).

**Cauca:** without locality, flowered in cultivation at J & L Orchids, Easton, Connecticut, 28 Sep. 1991, *C. Luer 15437* (MO).

Also Ecuador (Pichincha, Holotype, *C. Luer et al. 4399*: MO; Carchi; Imbabura; Napo; Pastaza; Morona-Santiago; Loja; Zamora-Chinchipe), Peru (Huanuco), Bolivia (Cochabamba).

Although uncommonly found in herbaria, this diminutive species is one of the most common in the genus in the Andes. It is usually overlooked or ignored because of its size. It usually grows on mossy twigs, often in association with other small pleurothallids. *Lepanthes acarina* is easily recognized by its tiny size with minute, spiculate flowers borne in a subcongested raceme beyond the apex of the leaf. The sepals are minutely serrulate, the dorsal broadly triangular, the laterals ovate and acute; the blades of the lip are lunate and between them the appendix is proportionally large, pubescent, and deflexed in the middle. Racemes frequently bear capsules and flowers simultaneously.

**Lepanthes aciculifolia** Luer, Orquideología 20(2): 194-196, 1996.

Ety.: From the Latin *aciculifolius*, "with needle-like leaves," referring to the narrow, terete leaves.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-5 cm long, enclosed by 6-7 glabrous, closely appressed, long-acuminate lepanthiform sheaths. **Leaf** erect, narrowly linear-semiterete, longitudinally shallowly channeled, with a sharply tridentate apex, 33-38 mm long, 2 mm wide, 1 mm deep, narrowed below into the base. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 10 mm long, borne by a slender peduncle 8-12 mm long; floral bracts acute, 1 mm long; pedicels 1.5 mm long; ovary sulcate, 1 mm long; **sepals** rose with whitish margins, glabrous, margins sparsely ciliate, the dorsal sepal ovate, concave, obtuse, minutely short-acuminate, 3 mm long, 1.66 mm wide unexpanded, 2 mm wide expanded, 3-veined, connate to the lateral sepals for 0.3 mm, the lateral sepals ovate, oblique, acute, diverging, 3 mm long, 1.2 mm wide, 2-veined, connate 0.5 mm; **petals** rose, transversely bilobed, 0.2 mm long, 2.5 mm wide, the lobes oblong, subequal, obtuse, pubescent, the upper lobe slightly broader, with a small lobule on the outer margin between the lobes; **lip** rose, bilaminate, 1.2 mm long, the blades elliptical with rounded ends, ciliate, the connectives oblong, the body broad, connate to the base of the column, the sinus obtuse, the appendix external, bipartite, the 2 parts brush-like; **column** stout, 1.5 mm long, the anther dorsal, the stigma ventral.

**Likely Valle del Cauca:** without collection data, purchased in Cali with *Lepanthes calodictyon* Hook. by Karen Zendig, flowered in cultivation by John Sullivan in New Jersey, Dec. 1991, *C. Luer 15536* (Holotype: MO).

**Nariño:** collection data unknown, collected by J. L. Aguirre, flowered in cultivation by J & L Orchids, Easton, Connecticut, 31 May 1997, *C. Luer 18514* (MO).

This distinctive species is recognized by the long, narrow, semiterete leaves, more slender than those of the other more or less terete-leaved species known from Colombia, *Lepanthes gustavoi* Luer & R. Escobar. The apex of the leaf is sharply tridentate. The rose-colored sepals have sparsely ciliate margins and the oblong petals are pubescent. The elliptical blades of the lip are ciliate. The two-part, brushlike appendix is located on the outer undersurface of the body of the lip.

*Lepanthes canaliculata* Luer & R. Escobar is another small species with narrowly linear leaves, but the leaves are longitudinally concave with involute sides. The larger flowers of *L. canaliculata* are distinguished by lateral sepals with approximate apices, and petals with triangular lobes with acute apices and a filamentous middle lobe.

**Lepanthes acrogenia** Luer & R. Escobar, Orquideología 18(1): 24, 1991.

Ety.: From the Greek *akrogeneios*, "with a prominent chin," referring to the large appendix.

**Plant** small, epiphytic, caespitose; roots fine. Ramicauls erect, slender, 2-4 cm long, enclosed by 4-6 ciliate lepanthiform sheaths. **Leaf** erect to suberect, coriaceous, narrowly ovate, acute, 28-43 mm long, 6-8 mm wide, the base cuneate into a petiole less than 1 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to at least 5 mm long, borne on top of the leaf by a slender peduncle 10-12 mm long; floral bracts 1 mm long; pedicels 3 mm long; ovary 1 mm long; **sepals** orange, denticulate-spiculate-carinate, margins denticulate, the dorsal sepal elliptical, deeply concave, 5 mm long, 3 mm wide unexpanded, 3-veined, connate to the lateral sepals for 0.25 mm, the lateral sepals narrowly triangular, oblique, diverging, 6 mm long, 1.6 mm wide, essentially free, 2-veined; **petals** purple, cellular-glandular, transversely bilobed, 0.8 mm long, 2.6 mm wide, the upper lobe obovate, obtuse, the lower lobe much smaller, obliquely narrowly triangular, acute, incurved; **lip** purple, bilaminate, the blades narrowly elliptical as thickened margins of broadly cuneate connectives, the apices acute, the bases narrowly rounded, 1.5 mm long, the body broad, connate to the column above the base, the sinus occupied by a thick, descending, ovate, minutely pubescent appendix; **column** slender, 2 mm long, the anther dorsal, the stigma apical.

**Nariño:** epiphytic in cloud forest above Ricaurte, alt. 1600 m, 3 Nov. 1979, *C. Luer, J. Luer, A. Hirtz & K. Walter 4624* (Holotype: SEL).

This species is characterized by the long-pedicellate, distichous raceme borne on top of a narrowly ovate leaf. The sepals are orange with denticulate margins with the veins externally spiculate-carinate, the dorsal deeply cucullate, the laterals narrowly triangular, free, and spreading. The petals are bilobed with the obtuse upper lobe much larger than the lower lobe. The blades of the lip are merely thickened margins of broad connectives. The appendix is large and fleshy, descending downward from the body.

The lip of *Lepanthes satyrica* Luer & Hirtz is similar, with a thick, blunt, protuberant body beneath a rostellar flap, differing with a minute appendix precariously attached to the summit. The overall smaller dimensions, a short-pedicellate raceme, flowers with deeply connate lateral sepals, and petals with narrow lobes further differentiate *L. satyrica.*

**Lepanthes acutissima** Luer & R. Escobar, Orquideología 19(2): 76-77, 1994.

Ety.: From the Latin superlative of acute, *acutissimus,* "very, very acute," referring to the sepals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-17 cm long, enclosed by 12-14 closely fitting, microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** erect, thinly coriaceous, ovate, acute, acuminate, 7-9 cm long, 2.5 cm wide, the base rounded, contracted into a petiole 3 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 3.5 cm long, borne behind the leaf by a filiform peduncle 2.5-3.5 cm long; floral bracts acuminate, 3 mm long; pedicels 1.5-2 mm long; ovary costate, 2 mm long; **sepals** translucent greenish white, glabrous, subcarinate, margins smooth, the dorsal sepal ovate-triangular, acute, long-acuminate, 13 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals diverging ca. 90°, ovate, oblique, acute, long-acuminate, 15 mm long, 2.5 mm wide, 2-veined, connate 2.5 mm; **petals** minutely pubescent, transversely bilobed, 1 mm long, 4.5 mm wide, the upper lobe rose, more or less oblong with the apex rounded, the lower lobe yellow, shorter, triangular, obtuse; **lip** rose, bilaminate, the blades microscopically pubescent, convex, ovate with obtuse ends, 2 mm long, the connectives broadly cuneate, the body connate to the base of the column, the sinus obtuse with a thick, triangular appendix; **column** 2 mm long, with the anther dorsal and the stigma ventral.

**Risaralda:** above Pueblo Rico, epiphytic in cloud forest below TV antenna, alt. 2400 m, 14 May 1993, *C. Luer, J. Luer, A. de Wilde & J. Gómez 16831* (Holotype: MO).

This species is known only from one area of cloud forest in the Western Cordillera. It is distinguished by relatively large flowers with greenish white, long-acuminate sepals, borne in a congested raceme nearly reaching the apex of the

acuminate leaf. The ovate convex blades of the lip cover the column. The appendix is thick and triangular. The similar but smaller *Lepanthes ingridiana* Luer from Ecuador bears even larger flowers. The blades of the sepals of the two species are subequal in length, but the acuminate tails of *L. ingridiana* are much longer, resulting in a length of three centimeters for each sepal.

**Lepanthes aduncata** Luer & R. Escobar, Orquideología 19(1): 31-32, 1994.

Ety.: From the Latin *aduncatus*, "hooked inward," referring to the lobes of the petals.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 10-15 cm long, enclosed by 10-11 thin lepanthiform sheaths, ciliate along the ribs and margins. **Leaf** suberect to spreading, thinly coriaceous, ovate, acute, lightly acuminate, with the basal margins involute, 4-7 cm long, 2-3 cm wide, contracted below into a petiole 3 mm long. **Inflorescence** a dense, distichous, successively many-flowered raceme up to 5.5 cm long, borne beneath the leaf by a peduncle 1.5-2.5 cm long; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 3 mm long; **sepals** light yellow, carinate, glabrous, margins smooth, the dorsal sepal narrowly triangular, acute, slightly acuminate, 8 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, slightly acuminate, 8 mm long, 2.75 mm wide, 2-veined, connate 2.5 mm; **petals** red-purple, microscopically pubescent, transversely bilobed, the upper lobe obliquely triangular, narrowly obtuse, overlapping the other upper lobe, 2 mm long, 1 mm wide at the base, the lower lobe falcate, acute, incurved, overlapping the other lower lobe beneath the column, 3 mm long, 1 mm wide at the base; **lip** red-purple, bilaminate, with the blades microscopically pubescent, oblong, with the ends rounded, 2 mm long, the connectives cuneate, the body connate to the base of the column, the sinus broad with the appendix long-pubescent, oblong, bifid at the apex; **column** 1.5 mm long, the anther apical and the stigma ventral.

**Antioquia:** Mun. San José de la Montaña, alt. 2500 m, collected by E. Valencia, Feb. 1990, *R. Escobar 4060* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 14922.

This species is distinguished by the tall, slender ramicauls and ovate leaves with the margins decurved above the base. The congested inflorescence begins flowering beneath the leaf, but eventually far surpasses the leaf in length. The sepals are narrowly acute. The narrow lobes of the petals curve inward to overlap above and below the column, with sharply hook-shaped lower lobes. The lip is unremarkable, with oblong blades and a pubescent appendix with a bifid apex.

**Lepanthes affinis** Luer & R. Escobar, Orquideología 17(3): 145-148, 1988.

Ety.: From the Latin *affinis*, "allied to," referring to the similarity to *Lepanthes dunstervilleorum* Foldats.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls erect, 5-25 cm tall, enclosed by 10-22 ciliate lepanthiform sheaths markedly dilated at the ostia. **Leaf** erect, coriaceous, elliptical-ovate, 5-8 cm long, 2-2.7 cm wide, the apex acute, acuminate, the base rounded, abruptly contracted into a petiole 3-4 mm long. **Inflorescence** a congested, successively flowered raceme up to 15 mm long, borne behind the leaf by a filiform peduncle up to 20 mm long; floral bracts 1.25 mm long; pedicels 1.5 mm long; ovary 2 mm long; **sepals** yellow, carinate, glabrous, margins smooth, the dorsal sepal triangular, acute, shortly acuminate, 6 mm long, 3.75 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, acute, shortly acuminate, 5.75 mm long, connate 4.5 mm, 4.75 mm wide together, each 2-veined, suffused with rose on the medial halves; **petals** yellow-orange, suffused with red medially, microscopically pubescent, transversely elliptical, bilobed, 1 mm long, 3.5 mm wide, the lobes subequal, triangular, narrowly obtuse; **lip** bilaminate, the blades violet with yellow margins, glabrous to microscopically pubescent, ovate, acute, 1.5 mm long, the connectives broadly cuneate, the body connate to the base of the column, the sinus notched with a flexibly hinged, long-ciliate, oblong appendix; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** epiphytic in cloud forest, Alto de Santa Inéz, alt. 2250 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10331* (Holotype: MO).

This large, handsome species is most similar to the widespread *Lepanthes dunstervilleorum*. *Lepanthes affinis* is distinguished from *L. dunstervilleorum* by its smooth-margined rather than denticulate sepals, and a lip with blades that are at most microscopically pubescent with a longer, narrower appendix, rather than pubescent with an oblong appendix.

**Lepanthes aggeris** Luer & R. Escobar, Orquideología 19(1): 32-33, 1993.

Ety.: From the Latin *agger, aggeris*, "of the dam," referring to the locality near a large, earthen dam.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-27 mm long, enclosed by 5 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, obtuse, 9-12 mm long, 6-9 mm wide, the base cuneate into a petiole 0.5 mm long. **Inflorescence** a loose, flexuous, successively many-flowered raceme, up to 6 cm or more long including the peduncle ca. 1 cm long, borne far beyond the leaf; floral bracts 1 mm long; pedicels 1 mm long; ovary 1 mm long; **sepals** yellow, glabrous, unicarinate, margins with an infrequent, microscopic tooth, the dorsal sepal broadly ovate, obtuse, shortly acuminate, 2.8 mm long, 2.5 mm wide, barely 3-veined, connate to the lateral sepals for 0.4 mm, the lateral sepals ovate, oblique, diverging, 3 mm long, 1.33 mm wide, 1-veined, connate 1.4 mm, the apices subacute, contracted into caudae less than 0.5 mm long; **petals** light orange, ciliate, transversely bilobed, 0.75 mm long, 2.8 mm wide, the lobes similar, more or less oblong, obtuse, angled obliquely inward with the upper lobes overlapping; **lip** light orange, bilaminate, the blades lunate with rounded ends, ciliate, 1.5 mm long, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus shortly excavated with a microscopic appendix, nearly invisible, bacillus-like, supported by an invisible membrane; **column** 1.5 mm long, with the anther dorsal and the stigma apical.

**Antioquia:** Mun. Santa Rosa, near Represa de Miraflores, alt. 2200 m, collected by E. Valencia, June 1991, flowered in cultivation at Colomborquídeas, 3 Jan. 1993, *R. Escobar 5244* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16561.

This species is distinguished by the long, flexuous, successively flowered raceme far surpassing the little, ovate leaf. The yellow sepals are broad with shortly acuminate apices; the laterals are single-veined. The upper lobes of the oblong, ciliate petals overlap. The lip with incurved blades is similar to many in the genus, but the appendix is most remarkable for its microscopic size. Barely visible, the slender, bacillus-like appendix is suspended between the margins of the excavate sinus by an invisible web.

**Lepanthes agglutinata** Luer, Phytologia 54(5): 327, 1983.

Ety.: From the Latin *agglutinatus*, "glued together," referring to the blades of the lip.

Syn.: *Lepanthes porphyrea* Luer & R. Escobar, Amer. Orchid Soc. Bull. 53: 922, 1984.
Ety.: From the Greek *porphyreos*, "purple," in reference to the leaves.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-18 cm long, enclosed by 8-16 minutely ciliate lepanthiform sheaths. Leaf erect, thinly coriaceous, often suffused with purple, ovate, acute, long-acuminate, 4-9 cm long, 1-2.7 cm wide, the base cuneate to rounded, contracted into a petiole 2-4 mm long. **Inflorescence** a secund, congested, long-pedicellate, successively many-flowered raceme up to 25 mm long, borne by a slender peduncle 10-25 mm long, along the back of the leaf; floral bracts 1-1.5 mm long; pedicels 3-4 mm long; ovary 2-3 mm long, winged; **sepals** translucent white or light yellow, glabrous, carinate, acute, shortly acuminate, margins minutely denticulate, the dorsal sepal broadly ovate-triangular, 5.5-6 mm long, 4.25-5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique with the apices diverging, 5.5-6.5 mm long, 2.5-3 mm wide, 2-veined, connate 1.5-2 mm; **petals** green with the upper margin dark purple, shortly pubescent, transversely oblong, 1.5 mm long, 4.5-5 mm wide, with a 1 mm long, descending process from the outer margin at the midvein, the upper lobe oblong, obliquely obtuse, the lower lobe smaller, oblong, obtuse; **lip** green to rose, bilaminate, the blades thin, lunate, microscopically pubescent, oblong with rounded ends, 1.5-1.75 mm long, adherent medially over the column,

the connectives narrow, oblique, from the apical portion of the blade, the body narrow, connate to the base of the column, the sinus obtuse, the appendix relatively large, 1 mm long, oblong, ciliate, concave, truncate-retuse, with a ciliated, apical gland; **column** 1.5-2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** collection data unknown, flowered in cultivation at Colomborquídeas, 5-9 May 1983, *C. Luer 16722* (MO); epiphytic in cloud forest along Río El Oro, north of Yarumal, alt. 2700 m, 1 May 1984, *C. Luer, J. Luer & R. Escobar 10071* (holotype of *L. porphyrea:* MO; isotype, SEL); lithophytic, Autopista to Bogota, Río Cocorná, alt. 1650 m, 21 Aug. 1984, *R. Escobar, C. Head & E. Valencia 3381* (MO); same collection, flowered in cultivation at J & L Orchids in Easton, Connecticut, May 6 1990, *C. Luer 14742* (MO); Vereda San Fermin, via Ventanas-Briceño, alt. 2100-2300 m, 11 Nov. 1987, *R. Callejas et al 5528* (HUA); Cocorná, Río Cocorná, flowered in cultivation in Bristol, Connecticut by H. P. Jesup, 10 Dec. 1988, *C. Luer 13788* (MO); Parque Nacional Natural "Las Orquídeas," Sector Calles, margen izquierda del río Calles, alt. 1460 m, 11 Feb. 1989, *A. Cogollo, D. Cárdenas & O. Alvarez 3861* (MO); Jardín, alt. 2500 m, collected by M. Zapata, 1990, flowered in cultivation at Colomborquídeas, 15 Dec. 1992, *R. Escobar 5036* (MO); epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17640, 17646* (MO).

**Santander:** Mun. Velez, epiphytic in cloud forest west of Velez toward Landazuri, alt. 2000 m, 5 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10140* (MO); Virolín, El Taladró, collected by E. Valencia, April 1992, flowered in cultivation at Colomborquídeas, 16-19 May 1883, *C. Luer 16929* (MO).

**Chocó:** San José del Palmar, Cerro del Torrá, Río Negro below the heliport, alt. 1900 m, 12 Aug. 1988, *J. E. Ramos, P. Silverstone-Sopkin, L. H. Ramos, et al.*(CUVC).

**Valle del Cauca:** Buenaventura, carretera vieja Cali-Buenaventura, alt. 50 m, 9 May 1997, *J. T. Otero & B. Angulo C. 100* (MO).

**Nariño:** Altaquer, flowered in cultivation at Colomborquídeas, 5-9 May 1983, *C. Luer 16734* (MO).

**Caqueta:** Reserva Municipal Andaqui, alt. ca. 1200 m, July 2011, *D. Cardenas et al. 41969* (COAH).

Also Ecuador (Zamora-Chinchipe, Holotype: *D'Alesssandro 165*: SEL; Sucumbíos; Pichincha; Napo; Morona-Santiago; El Oro).

This species is frequent and widely distributed in Colombia and Ecuador. It is easily identified by the very congested, many-flowered raceme that lies behind the leaf that is commonly suffused with purple; rather large, translucent flowers with emerald green petals edged in dark purple, with a slender, descending lobule on the outer margin; and a lip with thin, membranous blades adherent over the column. The blades are borne near their apices by narrow, oblique connectives. The appendix is comparatively large and boat-shaped.

A number of Colombian species are similar vegetatively and florally. *Lepanthes agglutinata* is similar to *L. janitor* Luer & R. Escobar, but the inflorescence of *L. janitor* is not secund and its column has a large rostellar flap. The inflorescence of the similar *L. pilosiaures* Luer & R. Escobar is also not secund, and the margins of the sepals are smooth rather than denticulate. The petals of *L. posadae* Luer & R. Escobar are distinguished by scimitar-shaped, much longer lower lobes; and the column is bifurcated with a bilobed stigma.

**Lepanthes aguirrei** Luer, Selbyana, 30(1): 4, 2009.

Ety.: Named in honor of J. L. Aguirre, who collected this species in southern Colombia.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-4.5 cm long, enclosed by 9-10 microscopically ciliate lepanthiform sheaths. **Leaf** erect, reticulated with purple, elliptical, subacute, 14-20 mm long, 9-10 mm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a congested, distichous, successively few-flowered raceme, 3-4 mm long, borne on top of the leaf by a filiform peduncle 5-6 mm long; floral bracts oblique, acute, 1 mm long; pedicels 1-1.5 mm long; ovary 1 mm long; **sepals** dull red with purple margins, margins minutely denticulate, caudate, the dorsal sepal subcircular, 5.5 mm long, 3 mm wide, 5-veined, with the rounded apex abruptly acuminate into a relatively stout cauda 1.5 mm long, connate to the lateral sepals for 0.5 mm, the lateral sepals connate

1.5 mm, ovate, oblique, acute, diverging, 6 mm long including the caudae 1.5 mm wide, 2-veined, contracted into caudae 2.5 mm long; **petals** orange, deeply trifid, the lobes narrowly linear, the uppermost lobe slightly longer, long-ciliate, 1.5 mm long, the lower 2 lobes microscopically pubescent, 1 mm long; **lip** orange-brown, bilaminate, the blades elliptical, convex, pubescent, 1.5 mm long, embracing the column, with connectives very broad, more than half the length of the blade, to form a broad body, connate to the column above the base, the appendix external, narrowly oblong, recurved, pubescent; **column** semiterete, 2 mm long, with the anther dorsal and the stigma ventral.

**Nariño:** collected by J. L. Aguirre, flowered in cultivation by J & L Orchids, Easton, Connecticut, June 1998, *J & L 1296-536* (Holotype: MO), C. Luer illustr. 18825.

This small species is characterized by an ovate, purple-reticulated leaf with a much shorter, few-flowered inflorescence. The sepals are minutely denticulate and contracted into relatively stout tails. The petals are deeply trifid, with the lobes narrowly linear and diverging, the upper lobe being slightly broader and pubescent. The blades of the lip are convex and pubescent, and the connectives are exceptionally broad and form an exceptionally broad and long body. The appendix is oblong, pubescent, and recurved.

*Lepanthes heptapus* Luer & R. Escobar and *L. hexapus* Luer & R. Escobar share a Colombian origin and the characteristic deeply trifurcate petals with slender lobes. *Lepanthes aguirrei* is distinguished from these two others by its larger size, with ramicauls four centimeters in length instead of two centimeters or less, and its stoutly caudate rather than acute sepals.

**Lepanthes alcicornis** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(4): 368, 1984.

Ety.: From the Latin *alcicornis*, "elk-horned," referring to the appearance of the forked petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, suberect, 2-4 cm long, enclosed by 6-8 close, minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, ovate-elliptic, acute, acuminate, 25-28 mm long, 8-13 mm wide, the base cuneate into the 1 mm long petiole. **Inflorescence** a very congested, distichous, successively flowered raceme up to 6 mm long, borne behind the leaf by a filamentous peduncle 3-7 mm long; floral bracts 0.8 mm long; pedicels 1.25 mm long; ovary 1.5 mm long; **sepals** yellow, suffused with rose centrally, glabrous, essentially free to near the base, margins smooth, the dorsal sepal reflexed, obovate, obtuse, 3 mm long, 1.33 mm wide, 3-veined, the lateral sepals elliptical, subacute, diverging, 2.66 mm long, 1.33 mm wide, 2-veined; **petals** bright yellow, 4-lobed, 0.5 mm wide at the middle, the two halves bifurcate, the lobes narrowly linear-triangular, 1-2.66 mm long; **lip** magenta, minutely pubescent, more or less elliptical-cordate, 1.66 mm long, 1 mm wide expanded, with narrowly obtuse, oblique, basal lobes erect, embracing the column, the obtuse apex shallowly cleft, the base connate to the column below the middle; **column** 1.5 mm long, the anther apical, the stigma ventral.

**Antioquia:** Mun. Yarumal, Quebrada El Oro, alt. 1730 m, 21 May 1983, *R. Escobar & E. Valencia 2646* (Holotype: SEL), C. Luer illustr. 9103; same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, 13 Jan. 1984, *R. Escobar 3191* (Clonotype: JAUM); same locality, flowered in cultivation by L. & J. Posada at Colomborquídeas, 5 Dec. 1983, *R. Escobar 3182* (JAUM); Mun. Yarumal, road to Briceño, Quebrada El Oro, alt. 1800 m, 22 Aug. 1984, *R. Escobar, O. Monsalve, C. Head, E. de Escobar & E. Valencia 3403* (MO); Parque Nacional Natural "Las Orquídeas," Sector Calles, alt. 2180-2320 m, 2 June 1988, *A. Cogollo & J. G. Ramírez 3158* (JAUM); Parque Nacional Natural "Las Orquídeas," Sector Venados, alt. 900 m, 7 June 1988, *A. Cogollo, J. G. Ramírez & O. Alvarez 3366* (JAUM); Valdivia, epiphytic in forest remnant along the road to Briceño, Quebrada El Oro, alt. 1850 m, 16 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14200* (MO).

This little species is remarkable for the forked petals, both petals with their four rami resembling the antlers of an elk. The sepals are essentially free, the dorsal sepal obovate and reflexed; and the lip is elliptical with the obtuse apex cleft without an appendix.

This species is one of a group characterized by a cordate lip with a round, cleft apex. *Lepanthes alcicornis* is similar to *L. culex* Luer & R. Escobar, with which it grows sympatrically. Both are small vegetatively, with small flowers with reflexed sepals and the cordate lip with the base connate to about the middle of the column. Vegetatively, *L. culex* is larger than *L. alcicornis*, with flowers with two-pronged petals rather than four-pronged petals.

**Lepanthes alkaia** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(5): 580-582, 1985.

Ety.: From the Greek *alkaia*, "a lion's tail," referring to the long, pubescent appendix with a shaggy tip.

**Plant** small, weak, epiphytic, caespitose; roots filamentous. Ramicauls slender, erect to suberect, 2-3.5 cm long, enclosed by 5-7 shortly ciliate lepanthiform sheaths. **Leaf** suberect to spreading, coriaceous, ovate, acute, acuminate, 23-30 mm long, 8-11 mm wide, the base rounded or cuneate into a petiole 1-1.5 mm long. **Inflorescence** a congested, distichous, successively flowered raceme up to 5 mm long, borne on top of the leaf by a filiform peduncle 12-15 mm long; floral bracts 1 mm long; pedicels 1.25-1.5 mm long; ovary 1 mm long; **sepals** light orange, glabrous, carinate, ovate, acute, margins sparsely cellular-denticulate, the dorsal sepal 4 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals connate 1.5 mm, diverging, 3.75 mm long, 3.25 mm wide together, each 2-veined; **petals** dark orange, long-pubescent, transversely bilobed, 1 mm long, 3.75 mm wide, with a minute lobule on the outer margin between the lobes, the upper lobe subquadrate, obliquely truncate, the lower lobe longer, narrowly triangular, acute; **lip** orange, the blades thin, elliptical, microscopically ciliate, 1.6 mm long, the ends rounded, the connectives short and broad, the body broad, pubescent, connate to the column above the base, the sinus occupied by a narrowly oblong, long-pubescent appendix 1 mm long, with a concave, bilobed, long-ciliate, apical segment; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Santander:** Mun. Velez, epiphytic in cloud forest west of Velez toward Landazuri, alt. 2150 m, 4 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10142* (Holotype: MO), *10141* (MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 9 July 1984, *R. Escobar 3297* (JAUM).

This frail little species resembles *Lepanthes dryades* Luer & R. Escobar, with which it grows in forests in the western part of the Eastern Cordillera. *Lepanthes alkaia* is most remarkable for the long-pubescent petals with only a minute remnant of a lateral lobe, and the lip with an elongated, pubescent appendix with a concave, bilobulate, long-ciliate apical segment. The petals of *L. dryades* are distinguished by well-developed lateral lobes, and the appendix is broadly triangular.

**Lepanthes alvarezii** P. Ortiz, Orquideología 24(2): 115, 2006.

Ety.: Named after Luis Eduardo Álvarez of Bogotá, who discovered and cultivated this species.

**Plant** large, epiphytic, caespitose, occasionally prolific; roots filiform. Ramicauls erect, at least 10-14 cm long, enclosed by ca. 9 lepanthiform, hirsute sheaths, 10-12 mm long, with dilated ostia. **Leaf** brilliant green above, suffused with purple on the underside, erect, elliptical, with a nerve on either side of the central one, with an acute, triapiculate apex, 6 cm long, 3 cm wide, the base cuneate into the petiole. **Inflorescence** a flaccid, arcuate, lax, successively many-flowered raceme ca. 5-6 cm long including the filiform peduncle ca. 4 cm long; floral bracts unknown; pedicels unknown; ovary unknown; **sepals** similar, violet-red with a yellow longitudinal band or yellow suffused with purple, glabrous, margins smooth, narrowly oblong-ovate, acute, essentially free to the base, 5 mm long, 1.8 mm wide, the dorsal 3-veined, the laterals each 2-veined, diverging more than 90°; **petals** yellow at the base, then suffused with red, transversely bilobed, ca. 0.25 mm long, 4 mm wide, the upper lobe minute, obtuse, the lower lobe filiform, very narrowly acuminate, ca. 4 mm long, with margins ciliate, the apex convolute; **lip** yellow to orange-red, slightly pubescent on the middle lower surface, trumpet-shaped, with a small median lobe, the ends rounded; **column** with the anther and stigma apical.

**Cundinamarca:** Guatavita, eastern slope of Páramo de Guasca, ca. 2800 m, June 2005, *L. E. Álvarez & P. Ortiz 1247* (Holotype: HPUJ); same collection, flowered in cultivation by L. E. Álvarez, June 2009, *L. Thoerle 132* (MO), C. Luer illustr. 21479.

*Lepanthes alvarezii* shares unusual relatively large, triangular, star-shaped flowers, each sepal five to seven millimeters long, with *L. isosceles* Luer & R. Escobar. *Lepanthes alvarezii* is readily distinguished by the much larger size of the plant, with ramicauls at least ten centimeters rather than five centimeters or less long; and flowers with petals with a minute, rounded upper lobe and a much longer, filiform lower lobe, as long as a lateral sepal, rather than the small oblong lobes of *L. isosceles.*

**Lepanthes amplior** Luer & R. Escobar, Orquideología 18(1): 26-28, 1991.

Ety.: From the Latin *amplior*, "greater," referring to the large size of the flowers in comparison to the plant.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-2.5 cm long, enclosed by 4-6 ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 9-12 mm long, 5-7 mm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a loose, flexuous, successively few-flowered raceme up to 4 cm long including the filiform peduncle 2-3 cm long; floral bracts 1.5 mm long; pedicels 2.5-3 mm long; ovary dentate-carinate, 2.5 mm long; **sepals** yellow-orange, glabrous, broadly ovate, subacute, slightly acuminate, carinate, margins smooth, the dorsal sepal 12 mm long, 9-10 mm wide, 3-veined, connate to the lateral sepals for 4 mm to form a broadly expanded, flat flower, the lateral sepals with a central, red-brown stripe, oblique, 12 mm long, connate 7.5 mm, 11 wide together, forming a shortly bifid synsepal, each 2-veined; **petals** yellow, microscopically pubescent, transversely bilobed, 0.6 mm long, 5 mm wide, the upper lobe suboblong, obtuse, the lower lobe longer, oblique, narrowly triangular, acute; **lip** red-brown, bilaminate, the blades narrowly oblong, long-ciliate, the apices acute, the bases rounded, 2.75 mm long, the connectives broadly cuneate, the body broad, connate to the column above the base, the appendix narrowly oblong, acute, incurved; **column** slender, 2.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** epiphytic in cloud forest near Alto de San Francisco above Villacaro, alt. 2850 m, 11 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10267* (Holotype: MO).

This species is notable for the extremely large flower produced by a very small plant. It is similar to the Venezuelan *Lepanthes calocodon* Luer (in Venezuelan Orchids Illustrated as *L. capitanea* Rchb. f.), but the flowers of *L. amplior* are flat instead of concave. The similar flowers of *L. matisii* Luer, Thoerle & P. Ortiz are smaller, with petals with lobes subequal in length, and a lip as long as the column.

**Lepanthes amplisepala** Luer & R. Escobar, Orquideología 19(2): 77-78, 1994.

Ety.: From the Latin *amplisepalus*, "with large sepals," referring to the size of the sepals and proportionally small petals and lip.

**Plant** medium in size, epiphytic, scandent; roots slender from the apices of ramicauls. Ramicauls erect, stout, prolific, 9-11 cm long, enclosed by 8-9 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, 4-5 cm long including the 3-5 mm long petiole, the blade 1.5 cm wide, cuneate below into the petiole. **Inflorescence** racemose, a loose, strict, secund, successively many-flowered raceme, up to 17 cm long including the peduncle 3-4 cm long; floral bracts oblique, 3 mm long; pedicels 3 mm long; ovary 3.5 mm long, the ribs subverrucose; **sepals** bright purple, glabrous, carinate, margins minutely denticulate, the dorsal sepal ovate-triangular, acute, 14 mm long, 5.5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals connate into an ovate, bifid synsepal with the apices acute, 14.5 mm long, 7.5 mm wide, each 2-veined; **petals** purple, minutely pubescent, transversely bilobed, 0.9 mm long, 3 mm wide, the lobes oblong, obtuse, the lower lobe slightly smaller; **lip** purple, bilaminate, the blades minutely ciliate, oblong with rounded ends, 1.5 mm long, the connectives cuneate, the body broad, connate to the base of the column, the sinus broad, the appendix minute, oblong; **column** 1.5 mm long, the anther apical, the stigma ventral.

**Cauca:** Mun. Silvia, epiphytic in Páramo de Guanacas northeast of Popayán, alt. 3150 m, 15 Nov. 1982, *C. Luer & R. Escobar 8430* (Holotype: SEL).

This scandent species is apparently endemic in the cool, scrubby forests of the Páramo de Guanacas in southern Colombia. A long, strict, secund raceme produces a series of comparatively large, bright purple flowers in succession. Although the petals and lip are about average in size for many species of *Lepanthes*, they are proportionally very small compared to the large sepals. The sepals are glabrous with minutely denticulate margins; the petals are minutely pubescent; and the lip is minutely ciliate.

*Lepanthes amplisepala* most closely resembles *L. illex* Luer, both notable for flowers with large sepals that dwarf the relatively tiny petals and lip. *Lepanthes amplisepala* is prolific in habit and bears flowers with a lip with minutely ciliate blades and a minute, oblong appendix, while *L. illex* is caespitose and bears flowers with a lip with glabrous blades and an ovate, pedunculate appendix.

**Lepanthes anatina** Luer & R. Escobar, Orquideología 20(3): 281-283, 1997.

Ety.: From the Latin *anatinus*, "of a duck," in allusion to the fancied appearance of the lip and column.

**Plant** medium in size, epiphytic, caespitose; roots very slender. Ramicauls slender, erect, 3-9 cm long, enclosed by 7-11 microscopically ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, ovate, acute, lightly acuminate, 4-6 cm long, 1.8-2.3 cm wide, the base rounded or broadly cuneate, contracted into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 20 mm long, borne behind the leaf by a filiform peduncle 15-25 mm long; floral bracts, lightly muriculate, 1 mm long; pedicels 1.25 mm long; ovary 1.5 mm long; **sepals** orange, glabrous, subcarinate, margins smooth, the dorsal sepal ovate-triangular, 3.25 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, subacute, acuminate, diverging, 3 mm long, 1.5 mm wide, 2-veined, connate 1 mm; **petals** purple, microscopically pubescent, transversely bilobed, 0.8 mm long, 3 mm wide, 1-veined, the lobes opposite, triangular, narrowly obtuse, the upper lobe larger; **lip** purple, bilaminate, the blades poorly developed, glabrous, narrowly ovate as thickened margins of the connectives, 0.75 mm long, much shorter than and not covering the column, the connectives cuneate, the body connate to the base of the column, the sinus acute with the appendix oblong, pubescent, with tufts of hairs at the base; **column** 1 mm long, the clinandrium large with the anther and stigma apical.

**Risaralda:** above Pueblo Rico, epiphytic in wet forest along the road to the TV antenna, alt. 1630 m, 14 May 1993, *C. Luer, J. Luer, A. de Wilde & J. Gómez 16847* (Holotype: MO).

This species, known only from one area in the Western Cordillera, is similar to *Lepanthes anserina* Luer & R. Escobar from farther north, also in the Western Cordillera. Although the flowers are basically similar, *L. anatina* is considerably larger vegetatively with much larger, ovate-acuminate leaves rather than small, elliptical, acute leaves. The apices of the lateral sepals of *L. anatina* are acuminate; those of *L. anserina* are obtuse and apiculate. The petals of *L. anatina* are broader and not as acute. The shape of the lobes of the lip and their position to either side of the exposed column are essentially the same in both species. Instead of a broadly triangular, membranous web, the appendix of *L. anatina* is brushlike with tufts of fine hair at the base.

**Lepanthes anchorifera** Luer, Revista Soc. Boliv. Bot. 4(1): 3-4, 2003.

Ety.: From the Latin *anchorifer*, "bearing an anchor," referring to the appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-5 cm long, enclosed by 6-7 microscopically ciliate lepanthiform sheaths. **Leaf** suffused with purple beneath, margined,

erect, coriaceous, elliptical-ovate, acute, acuminate, 2.5-3 cm long, 1-1.2 cm wide, the base rounded, contracted into a petiole 1-1.5 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme, up to 5 mm long, borne behind the leaf by a slender peduncle 7-8 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** suffused with purple with the margins remaining green, glabrous, carinate, margins smooth, the dorsal sepal ovate, subacute, slightly acuminate, 5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, diverging, 4.5 mm long, 2.25 mm wide, connate 1.75 mm, 2-veined; **petals** orange, red at the base, transversely bilobed, 1 mm long, 3.5 mm wide, 1-veined, more or less oblong, nearly of equal length, obtuse, pubescent; **lip** red, bilaminate, 1.2 mm long, with the blades oblong, shallowly concave, with rounded ends, long-ciliate at the apex, the connectives nearly as broad as the blades are long, obtusely angled on the anterior margin, forming a broad body, connate to the base of the column, with the appendix oblong and concave with a transverse, bilobed, ciliate terminal segment; **column** stout, 1.5 mm long, with the anther-bed 1 mm long, the anther dorsal and the stigma subapical.

**Risaralda:** Santuario, flowered in cultivation at Orquídeas del Valle, 14 Jan. 2001, *A. Niessen & J. C. Uribe 087* (Holotype: MO), C. Luer illustr. 19898.

This species is characterized by its small size; caespitose habit; and a successively flowered raceme shorter than the ovate, acuminate leaf. The sepals are acute, and the petals are transverse with pubescent, equal-sized, oblong lobes. The blades of the lip are oblong and concave, with long-ciliate apices. The connectives are as broad as the blades are long, with an obtuse angle on the anterior margin. Most distinctive is the straplike, concave appendix with a transverse, pubescent, anchor-shaped terminal segment.

## **Lepanthes andrenoglossa** Rchb. f., Bonplandia 3: 241, 1855.

Ety.: Presumably from *Andrena* Fabricius, a genus of bee, and the Greek *glossa*, "tongue," for the resemblance of the appendix to this furry insect.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender erect, 1.5-5 cm long, enclosed by 7-10 closely fitting, microscopically scabrous lepanthiform sheaths with narrowly acuminate ostia. **Leaf** more or less horizontal, coriaceous, ovate, acute, acuminate, 11-22 mm long, 7-10 mm wide, the base broadly cuneate to rounded, contracted into a petiole 1 mm long. **Inflorescence** a congested, successively many-flowered raceme up to 15 mm long, borne on top of the leaf by a filiform peduncle less than 10 mm long; floral bracts 1 mm long; pedicels 2 mm long, overlapping; ovary 1.25 mm long; **sepals** orange, glabrous, margins smooth, the dorsal sepal broadly ovate, obtuse, minutely acuminate at the apex, 3 mm long, 2.75 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals connate into a broadly ovate, shortly bifid synsepal, 3 mm long, 3 mm wide, each 2-veined, the apices acute, shortly acuminate; **petals** purple, microscopically pubescent, transversely bilobed, with a slender marginal process between the lobes ca. 0.5 long, the petal 1 mm long, 3 mm wide, the upper lobe oblong, obliquely truncate, 2 mm long, 1 mm wide, the lower lobe triangular, acute, 1 mm long, 0.5 mm wide; **lip** purple, bilaminate, blades thin, free, elliptical with rounded ends, minutely ciliate, 1.5 mm long, borne at the base by short connectives, the body occupied by the appendix, connate to the base of the column, the sinus obtuse with a proportionally large, oblong, acute, concave, ciliate appendix; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Quindio:** epiphytic at the pass between Salento and Tocha, alt. 3300 m, 10 May 1993, *C. Luer, J. Luer, R. Escobar & A. de Wilde 16746* (MO).

**Putumayo:** epiphytic in scrub forest in the páramo between La Cocha and Sibundoy, alt. 3000 m, 26 Jan. 1987, *C. Luer, J. Luer, C. H. Dodson, O. de Benavides, R. Escobar & E. Valencia 12532* (MO).

Also Ecuador (Pichincha, Holotype, *Jameson 66*: W).

This small species, recognized by Reichenbach as distinct from *Lepanthes mucronata* Lindl., has been treated as a synonym of the latter common, widely distributed relative (Luer 1996b). *Lepanthes andrenoglossa* is distinguished from *L. mucronata* by shorter, shortly acuminate, broadly ovate leaves; a single short, very congested raceme; petals with a much reduced marginal process, the apex of the upper lobes simply obliquely truncate, rather than truncate with shortly acuminate apices; and a lip with free rather than adherent blades.

**Lepanthes anemica** Luer & Thoerle, Harvard Pap. Bot. 16(2): 322, 2011.

Ety.: From the Greek *anhaemeticos*, "anemic," referring to the pale colors of the flower.

**Plant** medium in size, epiphytic, caespitose; roots and rhizome unknown. Ramicauls slender, erect, at least 7.5 cm long, enclosed by at least 8 microscopically ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, ovate, acute, acuminate, 5.5 cm long, 3 cm wide, the base broadly cuneate to rounded, contracted into a petiole 2-4 mm long. **Inflorescence** an extremely congested, long-pedicellate, successively many-flowered raceme up to 15 mm long, borne by a slender peduncle 5-22 mm long, along the back of the leaf; floral bracts 1-1.5 mm long; pedicels 2-3 mm long; ovary 2 mm long; **sepals** translucent light yellow, glabrous, carinate, acute, acuminate, margins microscopically denticulate, the dorsal sepal ovate-triangular, 7.5 mm long, 4.25 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, acute, acuminate, diverging, 8.5 mm long, 2.5 mm wide, 2-veined, connate 2 mm; **petals** white with the upper and inner margins pale rose, shortly pubescent, transversely bilobed, 1.25 mm long, 4.5 mm wide, 3-veined, with a 0.5-mm long, descending process from the outer margin at the midvein, the upper lobe oblong, obliquely obtuse, 2.4 mm long, the lower lobe triangular, obtuse, 1.8 mm long; **lip** rose, bilaminate, the blades thin, free, microscopically pubescent, oblong-ovate with rounded ends, 1.2 mm long, the connectives narrow, oblique, from the central portion of the blade, the body broad with the basal halves of the connectives, connate to the base of the column, the sinus bitumorous, the appendix pubescent, triangular, narrowly truncate, concave basally, 0.4 mm long; **column** stout, 1.7 mm long, the apex 1 mm wide, the anther apical, the stigma ventral.

**Antioquia:** Cocorná, Río Vino, collected Mar. 1999, by Francisco López, flowered in cultivation by Colomborquídeas, El Retiro, 15 June 2009, *L. Thoerle 142* (Holotype: MO), C. Luer illustr. 21485.

This species from the Central Cordillera of Colombia is similar to the frequent and widely distributed *Lepanthes agglutinata*, and may have been identified as that. In habit similar, it is distinguished from *L. agglutinata* by larger flowers with narrower, longer-acuminate sepals. The petals of the two species are similar except for color: those of *L. agglutinata* are green with the upper portion dark purple. In the present specimen, the blades of the lip do not adhere over the column, unlike those of *L. agglutinata*. The lip of *L. agglutinata* has blades supported by connectives from the apex, and a large, cymbiform appendix, while *L. anemica* has blades supported by connectives from the center and a smaller, triangular appendix.

**Lepanthes anserina** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(3): 258, 1984.

Ety.: From the Latin *anserinus*, "like a goose," referring to the lip and column that resemble a goose in flight.

**Plant** small, epiphytic, densely caespitose; roots slender. Ramicauls slender, erect, 3-5 cm long, enclosed by 4-6 close, minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, 20-35 mm long, 8-9 mm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** racemose, approaching the leaf in length, floriferous, the racemes congested, successively flowered, up to 15 mm long, borne behind the leaf by a filiform peduncle up to 10 mm long; floral bracts 1 mm long, spiculate; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** translucent yellow with red basally, glabrous, margins smooth, the dorsal sepal ovate, acute, 3.3 mm long, 1.75 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, obtuse, apiculate, connate 1 mm, diverging, 3 mm long, 3 mm wide, 2-veined; **petals** yellow, suffused with red medially, cellular-pubescent, narrowly transversely elliptical, 0.6 mm long, 4.75 mm wide, the lobes subequal, narrowly triangular, acute, attenuate; **lip** red, the blades triangular, widespread, 1 mm long, the margins revolute, exposing the column, acute and incurved at the apex, cellular-pubescent, the connectives narrowly cuneate, the body narrow, connate to the base of the column, the appendix a ciliate, triangular membrane across the sinus; **column** slender, clavate, 2.5 mm long, the anther and the stigma apical.

**Antioquia:** Mun. Cañasgordas, Boquerón de Toyo, alt. 2120 m, 2 May 1983, *C. Luer, R. Escobar, et al. 8920* (Holotype: SEL; Isotypes: COL, JAUM); Mun. Frontino, El Plateado, alt. 2060 m, 5 May 1983, *C. Luer, R. Escobar, et al. 9039* (SEL); Pabón, epiphytic in forest remnant along the road to Santa Ana, alt. 2050 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, et al. 17673* (MO).

This floriferous little species is distinguished by congested racemes often reaching the same length as the elliptical leaves; ovate sepals; transversely attenuated petals; and a long, protruding, clavate column exposed between winglike blades of the lip. It resembles *Lepanthes anatina*, but differs vegetatively in its smaller size, and leaves that are elliptical and acute rather than ovate and acuminate. The flowers of *L. anatina* are borne by a longer peduncle, 15 to 25 millimeters long, with lateral sepals that are acuminate rather than obtuse and apiculate. The petals are broader and less acute, with the upper lobe larger than the lower lobe. The lip and column of the two species are similar, but the appendix of *L. anserina* is broadly triangular and membranous, while that of *L. anatina* is small and brushlike.

**Lepanthes antennata** Luer & R. Escobar, Orquideología 19(2): 81, 1994.

Ety.: From the Latin *antennatus*, "with antennae," referring to the upper lobes of the petals.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, weak, erect, 7-10 cm long, enclosed by 13-14 microscopically ciliate lepanthiform sheaths. **Leaf** more or less spreading, suffused with purple, coriaceous, elliptical with the apex acute, long-acuminate, the sides convex with recurved margins, 4-5 cm long, 1-1.2 cm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively few-flowered raceme, up to ca. 5 mm long, borne on top of the leaf by a slender peduncle 10-15 mm long; floral bracts acute, lightly muricate, 1 mm long; pedicels 2.5 mm long; ovary 2 mm long; **sepals** red, glabrous, margins denticulate, the dorsal sepal elliptical-ovate, acute, concave, 5 mm long, 2.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, acute, diverging, 4.5 mm long, 1.75 mm wide, 2-veined, connate 1.5 mm at the base; **petals** microscopically cellular-pubescent, transversely bilobed, 0.5 mm long at the widest point, the upper lobe red, erect, filamentous, 5.5 mm long, the lower lobe yellow, triangular, acute, 1 mm long; **lip** red, glabrous, bilaminate, 3 mm long, the blades oblong with acute, long-acuminate apices, the connectives very short, cuneate, the body narrow, connate to the base of the column, the appendix triangular, hinged to the margin of the transverse sinus, concave behind erect margins, convex and pubescent centrally, with the apex inflexed, microscopically bilobulate; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Chocó:** Mun. San José del Palmar, Alto de Los Galápagos, alt. 2000 m, collected by E. Valencia, Sept. 1990, flowered in cultivation at Colomborquídeas, 21 Dec. 1992, *R. Escobar 5064* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16573; in humid secondary cloud forest, road to Valle department, alt. 2100 m, 22 Feb. 1992, *A. de Wilde 4407* (MO, herb. A. de Wilde); Mun. San José del Palmar, Cerro del Torrá, Río Negro below the heliport, alt. 1800 m, 12 Aug. 1988, *J. E. Ramos, P. Silverstone-Sopkin, L. H. Ramos, et al. 1179* (CUVC, MO), C. Luer illustr. 18461.

**Valle del Cauca:** Galápagos, at the pass between Valle del Cauca and Chocó, alt. 2050 m, 13 May 1993, *C. Luer et al. 16814* (MO).

This species is characterized by a slender, weak ramicaul bearing a more or less spreading, purplish leaf with a long-acuminate apex. The leaf is sulcate between the convex halves with recurving margins. The short, congested raceme lies on top of the leaf with the flower resembling a red insect with a pair of long antennae. The upper lobes of the petals are erect and filamentous, longer than the denticulate sepals. The lower lobe is very short and triangular. The apices of the blades of the lip are also long-acuminate. The appendix is a complicated flap, hinged from the margin of the sinus. The center of the appendix is convex and the margins are narrow but erect. The apex is inflexed and microscopically bilobulate.

Superficially, the flowers of *Lepanthes antennata* resemble those of *L. silverstonei* Luer, sharing ovate, acute, shortly acuminate sepals; and petals with an elongated, narrowly linear upper lobe greatly exceeding the lower lobe in length. *Lepanthes silverstonei* is readily distinguished by its ciliate sepals with the dorsal sepal flat, and a lip with oblong blades with rounded apices.

**Lepanthes antennifera** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(1): 52-54, 1985.

Ety.: From the Latin *antennifer*, "antenna bearing," referring to the appearance of the petals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, stout, 3.5-6.5 cm long, enclosed by 5-7 long-pubescent lepanthiform sheaths with dilated ostia. **Leaf** erect, coriaceous, ovate, acute, 22-30 mm long, 12-22 mm wide, the rounded base contracted into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively flowered raceme up to 15 mm long, borne along the back of the leaf by a filiform peduncle up to 8 mm long; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** light rosy tan, glabrous, carinate, ovate, acute, shortly acuminate, margins smooth, the dorsal sepal 5.5 mm long, 2.8 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals minutely denticulate, oblique, 5.5 mm long, connate 2 mm, diverging, 4.5 mm wide together, each 2-veined; **petals** yellow, suffused with red, microscopically pubescent, transversely bilobed-falcate, 0.75 mm long, 4.5 mm wide, the upper lobe very narrowly triangular, oblique, acute, the lower lobe similar but smaller; **lip** red, microscopically pubescent, the blades narrowly oblong with rounded ends, 2 mm long, the apices incurved beneath the stigma, the connectives broad and short forming a broad body, connate to the column near the middle, the sinus rounded without an appendix; **column** stout, 2 mm long, the anther dorsal, the stigma apical.

**Norte de Santander:** Mun. Toledo, epiphytic in cloud forest, Alto de Mefué, alt. 2500 m, 12 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10288* (Holotype: MO; Isotype: JAUM); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 5 July 1984, *R. Escobar 3284* (COL, JAUM); same locality, alt. 2000 m, 12 May 1982, *C. Luer & R. Escobar 7787* (SEL); epiphytic in cloud forest below the Páramo de Jurisdicciones, alt. 3150 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10231* (MO).

This species with short, stout ramicauls with long-ciliate sheaths is easily recognized by the slender, pointed, diverging lobes of the petals like two pairs of antennae. However, the most interesting feature is the total absence of an appendix, except perhaps for a couple of short hairs in the sinus of the lip. The slender, crescent-shaped petals of *Lepanthes meniscophora* Luer & Hirtz, from northern-most Ecuador, are similar, but the flowers with obtuse sepals with denticulate margins are borne by a secund raceme.

**Lepanthes aperta** Luer, Selbyana, 30(1): 5, 2009.

Ety.: From the Latin *apertus*, "open," referring to the exposed column between the expanded labellar blades.

**Plant** small, epiphytic, caespitose. Ramicauls slender, erect, 15-20 mm long, enclosed by 4-5 minutely ciliate lepanthiform sheaths. **Leaf** coriaceous, erect, elliptical, acute, 15-20 mm long, 7-9 mm wide, cuneate below into a petiole 2 mm long. **Inflorescence** a congested, successively several-flowered rachis up to 7 or more mm long, borne by a capillary peduncle 18-25 mm long, exceeding the leaf in length; floral bracts 1 mm long; pedicels 2 mm long; ovary 0.6 mm long; **sepals** dull yellow suffused with purple, the dorsal sepal lightly suffused, the lateral sepals heavily suffused, glabrous, margins smooth, the dorsal sepal ovate-triangular, acute, acuminate, 5 mm long, 3.5 mm wide, 3-veined, connate 1 mm to the lateral sepals, the lateral sepals ovate, acute, acuminate, 5 mm long, 2.25 mm wide, connate 2 mm into a broad, bifid synsepal 4.5 mm wide, each 2-veined; **petals** orange, glabrous, transversely bilobed, 1 mm long, 3 mm wide, 1-veined, the lobes similar, triangular, narrowly obtuse; **lip** orange, glabrous, bilaminate, the blades narrowly ovate with the apices acute and bases rounded, 1.25 mm long, the connectives cuneate from near the middle of the blade into a narrow body, connate to the column above the base, the sinus acute, the appendix segmented, with the terminal segment rounded, pubescent and with a pair of slender, microscopic papillae; **column** terete, 1 mm long, the anther dorsal, the stigma ventral.

**Colombia:** without collection data, flowered in cultivation at Ecuagenera, Gualaceo, Ecuador, 5 Mar. 2001, *C. Luer 19668* (Holotype: MO).

This small Colombian species without collection data is characterized by an elliptical leaf slightly surpassed by a short, congested raceme borne by a thrice-

longer peduncle. The sepals are acuminate; the triangular lobes of transverse petals are similar in size and shape; and the blades of the lip are far apart, exposing the column. The distal segment of the appendix is round with a pair of slender, microscopic papillae.

**Lepanthes aquila-borussiae** Rchb. f., Bonplandia, 2: 22, 1854.

Ety.: From the Latin *aquila*, "eagle," and *borussiae*, "Prussian," presumably referring to the fancied resemblance of the lip to the eagle on the Prussian coat of arms.

Syn.: *Lepanthes rabei* Foldats, Acta Bot. Venez. 3: 341, 1968.
Ety.: Named in honor of the co-collector of this species, M. Rabe.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-7 cm long, enclosed by 6-8 long-ciliate lepanthiform sheaths. **Leaf** erect, thickly coriaceous, narrowly ovate, acute, 2.5-5.5 cm long, 0.5-1.2 cm wide, contracted below into a petiole 1-2 mm long. **Inflorescence** an erect, congested, distichous, successively few- to many-flowered raceme to 5 cm long, including the peduncle 5-10 mm long, borne behind the leaf; floral bracts echinate, 1-1.5 mm long; pedicels 1-1.5 mm long; ovary costate, 1.25-2 mm long; **sepals** yellow, yellow suffused with brown, orange, or rose-brown, slightly concave, glabrous, margins ciliate-denticulate, the dorsal sepal ovate, acute, acuminate, 4-5 mm long, 2.5-3 mm wide, 3-veined, connate to the lateral sepals for ca. 1 mm, the lateral sepals ovate, oblique, acute, acuminate, diverging, 4-5 mm long, 1.75-2 mm wide, 2-veined (the lateral vein is faint, not shown in Dunsterville's illustration of *Lepanthes rabei*), connate 1 mm; **petals** yellow or orange, red medially, minutely pubescent, bilobed, 0.5-0.75 mm long, 2.5-4 mm wide, the lobes similar, more or less oblong, rounded at the ends; **lip** red or yellow suffused with red, minutely pubescent, bilaminate, the blades curved, elliptical-oblong, 1.5 mm long, the connectives broadly cuneate, embracing the column, the body broad, connate just above the base of the column, the appendix minute, pubescent, pedunculate; **column** 1.5 mm long, with the anther and the stigma apical, occupying half the length of the column.

**Norte de Santander:** Páramo de Jurisdicciones, alt. 3130 m, 11 Nov. 1981, *C. Luer 6650, 6651* (SEL); epiphytic in cloud forest below the Páramo de Jurisdicciones, alt. 3150 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10229* (MO); Alto de San Francisco above Villacaro, alt. 2850-2900 m, 11 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10261, 10263, 10272, 10359* (MO).

**Santander:** epiphytic in cloud forest, east of Bucaramanga toward Berlin, alt. 2550 m, 7 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10202* (MO).

Also Venezuela (Distrito Federal, Holotype, *Wagener s.n.*: W; Táchira, type of *L. rabei, J. A. Steyermark & M. Rabe 96936*: VEN; Mérida).

This small species with long-ciliate lepanthiform sheaths is relatively frequent and variable in its distribution in Venezuela and easternmost Colombia. A successively flowered raceme is shorter than the thickened, acutely ovate leaf. The sepals are denticulate with acuminate apices. The lobes of the small petals vary in shape. The lip is most distinctive with the broad connectives and blades encircling the column, as shown in Reichenbach's sketch on the herbarium sheet, resembling an eagle with raised, spread wings. The flowers of the similar *Lepanthes eucerca* Luer & Thoerle are nearly twice as large with long-acuminate sepals, and a lip with a bristle for the appendix.

**Lepanthes arbuscula** Luer & R. Escobar, Orquideología 19(1): 33-34, 1994.

Ety.: From the Latin *arbuscula*, "a little tree," referring to the stout, branching ramicaul.

**Plant** large, epiphytic, prolific; roots slender, basal and from the apices of the ramicauls. Ramicauls stout, erect, superposed, the lowermost ramicaul up to 40 cm long, enclosed by 12-13 lepanthiform sheaths with microscopically scabrous margins, the upper ramicauls ca. 5 cm long, enclosed by 6-7 similar lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-ovate, acute, shortly acuminate, 3-12 cm long including the petiole, 1-4.5 cm wide, cuneate to rounded below into a petiole 0.5-1 cm long. **Inflorescence** a loose, successively few-flowered raceme, 4-5 cm long, including the slender peduncle

2.5-3.5 cm long; floral bracts acute, 3 mm long; pedicels 2 mm long; ovary costate, 2.5 mm long; **sepals** yellow, glabrous, margins microscopically cellular-denticulate, the dorsal sepal triangular, acute, acuminate, 15 mm long, 5 mm wide at the base, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals ovate, oblique, acuminate, acute, widely diverging, 15 mm long, 4.5 mm wide, connate 4 mm into a synsepal 9 mm wide, each 2-veined; **petals** dark yellow with red margins, microscopically cellular-pubescent, transversely bilobed, 1 mm long, 2.25 mm wide, the lobes about equal in size and shape, ovate, obtuse; **lip** red, bilaminate, minutely ciliate, elliptical, lightly concave, 2 mm long, the connectives broad, thick, cuneate, the body broad, connate to the base of the column, the sinus broad, the appendix broad with a bifurcated apical gland; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Cauca:** Páramo de Puracé, alt. ca. 2900 m, collected by E. Valencia, May 1992, flowered in cultivation at Colomborquídeas, 12 Dec. 1992, *R. Escobar 5009* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16570.

This species is the largest known among the climbing, or prolific, species of the genus. The lowermost ramicauls are stout and can be 40 centimeters long. Progressively smaller ramicauls are produced from the apices of the ramicauls, creating a branching effect. The leaves produced by the lower, longer ramicauls are larger than the leaves produced by the much shorter, upper ramicauls. The loose few-flowered raceme is about as long as the shorter leaves. The flowers are large, measuring three centimeters between the tips of the dorsal and lateral sepals. The sepals are long-acuminate; the laterals are diverging. The transverse petals are very small for the size of the flower. The large flowers with acuminate sepals resemble those of *Lepanthes acutissima*, but the latter is caespitose.

**Lepanthes argentata** Luer & R. Escobar, Orquideología 17(3): 150-153, 1988.

Ety.: From the Latin *argentatus*, "silvered," referring to the crystals easily seen in the preserved flower parts.

**Plant** small, epiphytic, caespitose; roots slender but thicker than the ramicauls. Ramicauls very slender, weak, suberect, 5-6 cm long, enclosed by 8-9 thin, tightly fitting, microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly ovate, acute, 2.5-4 cm long, 0.8-1 cm wide, the base cuneate into the 1-2 mm long petiole. **Inflorescence** a loose, successively several-flowered raceme up to 30 mm long, borne on top of the leaf by a filiform peduncle 10-12 mm long; floral bracts 1 mm long; pedicels 0.75-1 mm long; ovary 0.75 mm long; **sepals** light yellow with a central red stripe, glabrous, carinate, margins smooth, the dorsal sepal ovate, acute, 2.75 mm long, 1.6 mm wide, 3-veined, connate to the lateral sepals for 0.25 mm, the lateral sepals ovate, oblique, acute, 2.5 mm long, connate 1.5 mm into a broadly ovate synsepal 2.5 mm wide, with the apex shortly bifid, each 2-veined; **petals** dark yellow, microscopically pubescent, transversely bilobed, 0.5 mm long, 2.5 mm wide, the lobes equal in size and shape, oblong with the apex rounded, the upper lobe suffused with red-purple; **lip** red-purple, blades poorly developed, the lobes cuneate with thick, ovate, blade-like margins with rounded ends, 1 mm long, cellular-ciliate, with silverish crystals, the body broad, connate to the base of the column, the sinus acute with an oblong, pubescent appendix; **column** stout, 1 mm long, the anther and stigma apical.

**Norte de Santander:** Mun. Toledo, epiphytic in cloud forest, Alto de Santa Inéz, alt. 2100 m, 13 May 1984, collected by R. Escobar, E. Valencia, C. Luer & J. Luer, flowered in cultivation by L. & J. Posada at Colomborquídeas, 27 June 1984, *R. Escobar 3274* (Holotype: MO), C. Luer illustr. 11534; same area, alt. 2000 m, collected by E. Valencia, May 1992, flowered in cultivation by L. & J. Posada at Colomborquídeas, 3 Jan. 1993, *R. Escobar 5245* (MO).

This little species is identified by the loose but straight, weak raceme only slightly shorter than the narrowly ovate leaf. The sepals are acute, with the laterals connate for more than half their length; the petals are transversely oblong with rounded apices; and the lip is divided into two cuneate halves with thickened margins as poorly developed blades. All flower parts contain silver-like crystals as occasionally seen in other species of the genus but seen here to a more marked

degree. Similar crystals are frequently seen in the flower parts of the genus *Stelis* Sw. Lindley first recorded their presence when he described *S. argentata*.

**Lepanthes aries** Luer, Phytologia 54: 329, 1983.

Ety.: From the Latin *aries*, "a ram," referring to the recurved blades of the lip.

**Plant** medium in size, epiphytic, caespitose; roots coarse. Ramicauls slender, erect, 8-15 cm tall, enclosed by 8-11 ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, oblong, acute, shortly acuminate, 5-6.5 cm long, 1.5-2.5 cm wide, the base cuneate into a petiole 5 mm long. **Inflorescence** 2 congested, distichous, successively flowered racemes up to 9 cm long, borne by a filiform peduncle up to 45 mm long along the back of the leaf; floral bracts 1.5 mm long; pedicels 2.5-3.5 mm long; ovary 2-2.5 mm long; **sepals** red to red-brown with thin yellow margins, glabrous to minutely pubescent, concave with apices often recurved, gaping, ovate, acute, acuminate, margins smooth or serrulate, the dorsal sepal 7.5 mm long, 3-3.75 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, 7.25 mm long, connate 4 mm, 4.5 mm wide together, each 2-veined; **petals** red, glabrous to ciliate, transversely bilobed, 1.2 mm long, 3.5-5 mm wide, the upper lobe elliptical, acuminate, subacute to acute, the lower lobe smaller, triangular, acute; **lip** red to rosy brown, bilaminate, the blades oblong, 3 mm long, the apices acute to obtuse, with or without cilia, the bases elongate, acute, recurved, the connectives broadly cuneate, the body broad, connate to the column with a slender claw, the appendix minute, minutely pubescent, 3-lobed, one lobe beneath the other 2 lobes, in the sinus; **column** terete, 2.5 mm long, the anther dorsal, the stigma ventral.

**Cauca:** Sotará, alt. 2800 m, obtained from J. L. Miranda, May 2003, flowered in cultivation at Colomborquídeas, 14-16 June 2009, *L. Thoerle 138* (MO), C. Luer illustr. 21471.

Also Ecuador (Imbabura, Holotype: *C. Luer, J. Luer, A. Hirtz, et al. 6044*: SEL).

*Lepanthes aries* is known from southern Colombia and northwestern Ecuador. It is distinguished by the congested, distichous inflorescence borne by a peduncle nearly as long as the ovate, acuminate leaf; deeply connate lateral sepals; and the blades of the lip with recurved bases. Specimens with pubescent sepals with serrulate margins, and ciliate petals and blades of the lip are known from Ecuador. The Colombian specimen examined was almost completely glabrous, with smooth-margined sepals. The basic morphology remains consistent, however. Similarly hornlike blades of the lip are seen in *L. cornualis* Luer & R. Escobar, also from southern Colombia, but the latter has one-veined, shallowly connate lateral sepals.

**Lepanthes aristata** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(5): 582-584, 1985.

Ety.: From the Latin *aristatus*, "abruptly terminated into a slender point," referring to the leaves of this species.

**Plant** small to medium in size, epiphytic, caespitose; roots filamentous. Ramicauls slender, erect, 3-11 cm tall, enclosed by 8-18 close, microscopically scabrous lepanthiform sheaths with aristate apices. **Leaf** suberect to spreading, thinly coriaceous, elliptical, 3-5 cm long including the apex, 1.5-2 cm wide, the apex obtuse to rounded, abruptly contracted into an aristate segment 1-1.5 cm long, the base broadly cuneate to rounded, contracted into a petiole 2 mm long. **Inflorescence** a congested, secund, successively flowered raceme up to 15 mm long, borne on top of the leaf by a filiform peduncle 10-22 mm long; floral bracts 1.5 mm long; pedicels 2.5 mm long; ovary 2 mm long; **sepals** yellow-orange, glabrous, broadly ovate, obtuse, shortly acuminate, subcarinate, margins smooth, the dorsal sepal 5 mm long, 4.75 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals oblique, 5 mm long, connate 2 mm, diverging, 5.25 mm wide together, each 2-veined; **petals** bright orange, microscopically pubescent, transversely bilobed, with a minute apiculum (a third lobe) on the outer margin between the lobes, the upper lobe oblong, obliquely truncate, the lower lobe smaller, oblong, truncate; **lip** orange-brown, microscopically pubescent, the blades ovate, adherent medially over the column, 1.75 mm long, acute at the apices, obtuse at the bases, the connectives cuneate, the narrow body connate to the base of the column, the appendix oblong, shallowly sulcate, ciliate, the apex truncate with 2 hairs on the ciliate margin protruding beyond the others; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** Mun. Toledo, epiphytic in cloud forest, Alto de Santa Inéz, alt. 2250 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10332* (Holotype: JAUM; Isotype: MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 14 July 1984, *R. Escobar 3302* (COL, JAUM); same area, alt. 2200 m, 13 May 1982, *C. Luer & R. Escobar 7828* (SEL); same location, alt. 2150 m, 23 May 1982, *C. Luer & R. Escobar 7947* (SEL).

This species may be recognized by the slender ramicauls with long-pointed sheaths; elliptical leaves with long-pointed apices that approach the blade in length; and transverse petals with a minute marginal apiculum between the lobes. Both the upper and lower lobes of the petals are bluntly truncate. The ovate blades of the lip and the oblong appendix are not particularly noteworthy.

**Lepanthes athena** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 61(3): 38, 1996.

Ety.: Named for the lepidopteran genus *Athena* Hübner, "the dagger-wings," referring to the petals.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender to stout, 7-28 cm long, enclosed by 9-16 coarsely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, acuminate, 5-11.5 cm long, 2-5 cm wide, the base rounded, contracted into a petiole 3-5 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 20 mm long, borne behind the leaf by a filiform peduncle 15-25 mm long; floral bracts 1.5-2 mm long; pedicels 1 mm long; ovary 4-5 mm long; **sepals** light yellow, glabrous, margins smooth, the dorsal sepal ovate, acute, 4-6.25 mm long, 2.25-3.25 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, obtuse, 4-5.5 mm long, 2.75-3.5 mm wide, 2-veined, connate 1.5 mm, with the apices acuminate, diverging widely; **petals** yellow-orange with purple margins, pubescent, transversely bilobed, 1.2-1.5 mm long, 4-7 mm wide, the upper lobe obovate with the obtuse apex contracted into a 0.5-mm long, diverging cauda, the lower lobe narrower, falcate, subovate, with the apex narrowly acuminate; **lip** red, bilaminate, the blades glabrous, flat, ovate, 1.3-1.8 mm long, acute at the apex, rounded at the base, the connectives broadly cuneate, forming a broad body, connate to the column above the base, the sinus subacute with a small, ovoid, bilobed appendix; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Nariño:** Ricaurte, wet forest around La Planada, alt. 1800 m, cultivated at La Planada Orquideario, 25 Jan. 1987, *C. Luer 12505A* (MO); in montane pluvial forest, La Planada, 7 km south of Ricaurte on road from Pasto to Tumaco, 1820 m, 21 July 1989, *C. H. Dodson, R. Escobar & E. Valencia 18050* (MO); locality unknown, collected by J. Aguirre, April 1992, flowered in cultivation at Colombor-quídeas, 16-19 May 1993, *C. Luer 16887* (MO).

**Colombia:** without collecting data, flowered in cultivation at Colomborquídeas, 27 Apr. 1983, *C. Luer 8845* (MO).

Also Ecuador (Carchi, Holotype*: C. Luer, S. Dalström & T. Höijer 9933*: MO).

This species from northernmost Ecuador and southern Colombia was considered conspecific with *Lepanthes actias-luna* Luer & Hirtz from the province of El Oro in southwestern Ecuador. However, this species is sufficiently distinct from *L. actias-luna* to be recognized. Superficially, the two species are inseparable from many of the large species with short, congested racemes.

The flowers of *Lepanthes athena* are distinguished from those of *L. actias-luna* by their smaller size and pubescent petals. Instead of the overlapping upper lobes of the petals with incurving apices of *L. actias-luna*, the upper lobes are ovate with short, diverging tails. The lower lobes are slender in both species, but acuminate and broader in *L. athena*. The lips are similar, but the microscopic morphology of the appendices differs, that of *L. athena* consisting of a smaller, ovoid body bilobed at the apex, while that of *L. actias-luna* is intricate, hinged by a membrane, with a bilobulate terminal segment.

**Lepanthes atomifera** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(1): 26, 1984.

Ety.: From the Latin *atomus,* "a tiny particle," and *-fir,* "bearing," in reference to the microscopic appendix.

**Plant** very small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 1-4 cm long, enclosed by 3-8 close, minutely ciliate lepanthiform sheaths. **Leaf** more or less spreading, purple beneath, coriaceous, ovate, acute, 10-18 mm long, 4-9 mm wide, the base rounded, abruptly contracted into the 1 mm-long petiole. **Inflorescence** a very congested, secund, successively flowered raceme up to 5 mm long, borne by a filiform peduncle 4-7 mm long on top of the leaf; floral bracts 0.5 mm long; pedicels 1 mm long; ovary 1.5 mm long; **sepals** rose-red, glabrous, ovate, subacute, margins smooth, the dorsal sepal 3 mm long, 2.2-2.5 mm wide, 3-veined, connate to the lateral sepals for nearly 1 mm, the lateral sepals connate to above the middle, 3 mm long, 3 mm wide together, each 2-veined; **petals** deep rose, glabrous or at most cellular, transversely oblong, 0.75 mm long, 2.5 mm wide, the lobes oblong-triangular with rounded apices; **lip** white, suffused with rose along the margins, the blades oblong, 1.3 mm long, convex, the ends rounded, the connectives cuneate, from the base of the blades, the body narrow, attached to the base of the column, the sinus incurved with an extremely minute, triangular appendix; **column** stout, 1.3 mm long, the anther apical, the stigma ventral.

**Antioquia:** Mun. Frontino, Alto de Cuevas, alt. 2050 m, 4 May 1983, *C. Luer, R. Escobar, et al. 8965* (Holotype: SEL); same area, 12 April 1974, *R. Escobar et al. 1202* (JAUM); same area, 14 May 1983, *R. Escobar & E. Valencia 2597* (SEL), C. Luer illustr. 9094; Frontino, km 15.5 of road between Nutibara and Murrí, disturbed wet/very wet montane vegetation, alt. 1830 m, 22 Sep. 1987, *J. L. Zarucchi, A. E. Brant & C. J. Castaño 5594* (MO).

The appendix of this small species is a microscopic, triangular process in the deep sinus of the lip. The blades of the lip are microscopically pubescent, borne by connectives from their bases; and the petals are glabrous with both lobes triangular with rounded apices. The flowers superficially resemble those of *L. sericinitens* Luer & R. Escobar, but the flowers of *L atomifera* are borne by a secund rather than distichous raceme, and the leaves are ovate and acute rather than broadly ovate and obtuse.

**Lepanthes auditor** Luer & R. Escobar, Orquideología 17(3): 154, 1988.

Ety.: From the Latin *auditor*, "a hearer," in allusion to the earlike petals.

**Plant** small, epiphytic, caespitose; roots slender but thicker than the ramicauls. Ramicauls very slender, weak, suberect, 3-7 cm long, enclosed by 5-9 thin, tightly fitting, microscopically scabrous lepanthiform sheaths. **Leaf** thinly coriaceous, more or less spreading, ovate, 25-30 mm long, 10-15 mm wide, the apex acute, long-acuminate, prominently tridenticulate, the rounded base contracted into the 0.5 mm long petiole. **Inflorescence** a congested, more or less secund, successively many-flowered raceme up to 8 mm long, borne on top of the leaf by a filiform peduncle ca. 3-6 mm long; floral bracts 1 mm long; pedicels 1.5-2 mm long; ovary 1.75 mm long; **sepals** translucent pale yellow, glabrous, margins smooth, the dorsal sepal broadly ovate, obtuse, 2.8 mm long, 2.4 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, connate 1 mm into a broadly ovate synsepal 2.8 mm long, 2.8 mm wide, with the apex cleft for 1 mm, the apices subacute, each 2-veined; **petals** bright yellow, red-purple at the base, microscopically pubescent, broadly cuneate-bilobed, 1 mm long, 2.5 mm wide, the upper lobe obliquely and broadly triangular, obtuse, the lower lobe nearly equal in size and shape; **lip** yellow, suffused with light purple, bilaminate, the blades diverging, thick, oblong-obovate with rounded ends, 1.25 mm long, ciliate, the connectives from the bases, short, oblong, the body transverse, connate to the base of the column, the appendix ovoid long-pubescent, biglandular at the apex; **column** 1 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Mesopotamia, between La Unión to Sonsón, alt. 2400 m, collected 25 Aug. 1984 by L. de Posada, C. Head & F. López, flowered in cultivation by L. & J. Posada at Colomborquídeas, 2 Sept. 1984, *R. Escobar 3417* (Holotype: JAUM; Isotype: MO); C. Luer illustr. 11525; Mun. Mesopotamia, collected by J. López, flowered in cultivation at Colomborquídeas, 23 May 1995, *C. Luer 17620* (MO).

This weak-stemmed species resembles many other species of the genus vegetatively, but the flowers are distinctive. The sepals are broadly ovate; the proportionally large, broadly cuneate petals stand out in the manner of intently listening ears; and the thick, oblong blades of the lip are prominently ciliate. The little, ovoid, long-pubescent appendix is minutely biglandular at the apex.

**Lepanthes aures-asini** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(2): 158, 1984.

Ety.: From the Latin *aures asini,* "the ears of a donkey," in reference to the appearance of the large petals.

**Plant** small, epiphytic, caespitose; roots filiform. Secondary stems slender, erect, 18-35 mm tall, enclosed by 4-5 close, microscopically ciliate lepanthiform sheaths. **Leaf** erect, thickly coriaceous to semiterete, very narrowly ovate, acute, 22-26 mm long, 4-5 mm wide, 3 mm thick, the base cuneate into a petiole 1 mm long. **Inflorescence** a dense, distichous, successively-flowered raceme up to 9 mm long, borne behind the leaf by a filiform peduncle 4-10 mm long; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 3 mm long; **sepals** red-purple, glabrous, margins smooth, the dorsal sepal oblong, 3 mm long, 2 mm wide, the apex rounded, 3-veined, the base connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, subacute, diverging, 3 mm long, 1.5 mm wide, 2-veined, connate 1 mm; **petals** red, large, glabrous, transversely bilobed, 1 mm long, 3.5 mm wide, the upper lobe ovate, oblique, obtuse, the lower lobe larger, oblong, obtuse, concave; **lip** red with a yellow margin, the blades elliptical, 2 mm long, thin, glabrous, concave, the apices acute, incurved, the bases rounded, the connectives short, broadly cuneate, connate to the base of the column, the sinus acute with a pubescent, broadly ligulate, concave appendix; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. La Unión: Alto El Chuzcal, alt. 2570 m, 10 May 1983, *R. Escobar & E. Valencia 2540* (Holotype: SEL), C. Luer illustr. 9092; Retiro, 2400 m, 17 April 1988, collected by W. Teague, *C. Luer 13223* (MO).

This little species, from the Central Cordillera of Colombia, has semiterete leaves, with a short, congested inflorescence below. The small, purple flowers are distinguished by large petals, the lower lobes concave and nearly covering the lateral sepals. The tips of the blades of the lip are acutely incurved, and the appendix is a small, pubescent, concave organ at the sinus.

**Lepanthes auriculata** Luer, Phytologia 54(5): 330, 1983.

Ety.: From the Latin *auriculatus*, "shaped like an ear," in reference to the blades of the lip.

**Plant** large, epiphytic, caespitose; roots coarse. Ramicauls erect, slender to stout, 8-30 cm tall, enclosed by 10-16 minutely ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, elliptical, acute, long-acuminate, 5-13 cm long, 2.5-5 cm wide, minutely ciliate along the veins beneath, the rounded base contracted into a petiole 3-5 mm long. **Inflorescence** a dense, successively many-flowered raceme up to 20 mm long, borne by a filiform peduncle 25-50 mm long behind the leaf; floral bracts 1.5 mm long; pedicels 1.25 mm long; ovary 3-4 mm long, narrowly winged; **sepals** yellow, glabrous, margins smooth, the dorsal sepal triangular, acute, acuminate, 9 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, 9 mm long, 4 mm wide, 2-veined, connate 3 mm, the apices acute, acuminate, diverging more than 90°; **petals** yellow, suffused with purple, transversely bilobed, 1.25 mm long, 5 mm wide, the upper lobe oblong-cuneate with the apex subtruncate-rounded, the lower lobe similar but smaller and narrower; **lip** yellow, edged in purple, bilaminate, the blades thick, elliptical, carinate, longitudinally concave, 2 mm long, the apex narrowly rounded, the base rounded, the connectives broad, short, oblique, the body broad, protruding and rounded, connate to the column above the base, the appendix short, oblong, pubescent; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Valle del Cauca:** El Cairo, Cerro del Inglés, Serrania de los Paraguas, between El Cairo and Río Blanco, alt. 2250 m, 30 Mar. 1988, *P. Silverstone-Sopkin, N. Paz, R. Eriksson, et al. 3786* (CUVC).

Also Ecuador (Zamora-Chinchipe, Holotype: *D'Alessandro 164*: SEL; Napo; Morona-Santiago; Loja), Bolivia (Cochabamba).

This large species, relatively frequently encountered in southeastern Ecuador and recorded less frequently from Colombia and Bolivia, is similar to several other large species with mostly yellow flowers, e.g., *Lepanthes ballatrix* Luer, *L. elata* Rchb. f. *Lepanthes auriculata* is distinguished by the concave, earlike blades of the lip. Two other large Colombian species share a lip with blades that are thick and concave between poorly defined calli. From *L. steyermarkii* Foldats, *L. auriculata* is distinguished by its widely diverging lateral sepals and the oblong, pubescent appendix in contact with the stigma. *Lepanthes orion* Luer & R. Escobar shares the widely diverging lateral sepals and the appendix appressed to the stigma with *L. auriculata*, but differs with obtuse rather than acute sepals, and an appendix that is glabrous and flabellate rather than pubescent and oblong.

**Lepanthes ballatrix** Luer, Phytologia 54(5): 331, 1983.

Ety.: From the Latin *ballatrix*, "a dancer," in reference to the fancied illusion of the flower.

**Plant** medium to large in size, epiphytic, caespitose; roots coarse. Ramicauls slender to stout, 10-30 cm long, enclosed by 8-15 lepanthiform sheaths, glabrous to microscopically scabrous on the upper sheaths, more or less microscopically ciliate on some of the stomata of the lower sheaths. **Leaf** erect, thinly coriaceous, narrowly ovate-elliptical, acute, acuminate, 6-12 cm long, 2.5-4 cm wide, the base rounded, abruptly contracted into a petiole 3-4 mm long. **Inflorescence** a very congested, distichous, short-pedicellate, successively flowered raceme up to 4 cm long, borne by a filiform peduncle up to 3 cm long behind the leaf; floral bracts 1-1.5 mm long; pedicels 1-1.5 mm long; ovary 2 mm long; **sepals** yellow, glabrous, carinate, margins smooth, the dorsal sepal triangular, acute, with apex reflexed, 7-9 mm long, 3.5-4.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, subacute, diverging, connate 2.5-3 mm, 7-8.5 mm long, 5-7 mm wide together, each 2-veined; **petals** yellow to orange with red to purple margins, transversely bilobed, 1.5-2 mm long, 4-5 mm wide, the lobes subcircular to broadly elliptical; **lip** orange to red, more or less suffused with purple, bilaminate, the blades oblong-lunate, 2 mm long, narrowly obtuse, minutely pubescent, the connectives broadly cuneate and short, the body broad, connate to the column below the middle, the appendix triangular, concave, ciliate; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Putumayo:** east of San Francisco, alt. unknown, 5 March 1989, *C. Luer & R. Escobar 14102* (MO); San Francisco, Río Blanco, alt. 3300 m, June 1987, flowered in cultivation at Colomborquídeas, 15 Dec. 1992, *R. Escobar E. Valencia & H. Volles 5037* (MO).

Also Ecuador (Pichincha, Holotype, *C. Luer et al. 7294*: SEL; Sucumbíos, Tungurahua, Morona-Santiago, Loja, Zamora-Chinchipe).

This large species is frequent and widely distributed in the Andes of Ecuador, but has been found less frequently in Colombia. *Lepanthes ballatrix* is similar to *L. elata* of Colombia and Central America, and *L. monitor* Luer of southern Colombia to Bolivia, but is distinguished by its narrow dorsal sepal and petals with subcircular lobes.

**Lepanthes barclaya** Luer & Thoerle, Harvard Pap. Bot. 16(2): 323, 2011.

Ety.: Named in honor of Harriet Barclay, who collected the species.

**Plant** large, caespitose; roots slender. Ramicauls stout, red-violet, 15-17 cm long, enclosed by 10-12 glabrous, ribbed lepanthiform sheaths. **Leaf** erect, coriaceous, oblong-ovate, subacute, shortly acuminate, 9-10 cm long, 3-3.5 cm wide, the base rounded, contracted into a petiole 5 mm long. **Inflorescence** a fascicle of 5-10 loose, successively flowered racemes 4-9 cm long, borne up the back of the leaf; floral bracts 3 mm long; pedicels 2 mm long; ovary 1.5 mm long; **sepals** described as yellowish by the collector, carinate, microscopically pubescent within, margins smooth, the dorsal sepal broadly ovate, 8 mm long, 5 mm wide, 3-veined, the apex subacute, acuminate into a slender cauda 2 mm long, connate to the lateral sepals for 2 mm, the lateral sepals ovate, oblique, connate 5 mm into a broadly ovate synsepal 8 mm long, 5 mm wide, each 2-veined, the apices approximate, acute, acuminate into 2-mm long caudae similar to that of the dorsal sepal; **petals** shortly pubescent, transversely oblong with obtuse tips, 1 mm long, 4 mm wide, the dorsal lobe slightly longer than the lower lobe; **lip** rose,

bilaminate, the blades glabrous, oblong with obtuse ends, 3 mm long, the connectives broadly cuneate, from the central portion of the blade, the body broad, connate to the column above the base, with a small ovoid, pubescent appendix in the obtuse sinus; **column** slender, 2 mm long, the anther apical, the stigma ventral.

**Cauca:** Páramo de Papas, near Laguna de Cusiyaco, alt. 3375 m, 13 Oct. 1958, *Harriet G. Barclay & P. Duajibioy 6070* (Holotype: MO; Isotype: US), C. Luer illustr. 21516.

This large species from a high altitude in southern Colombia is characterized by stout ramicauls that bear a fascicle of several loosely flowered racemes shorter than the oblong leaf with a shortly acuminate tip. The tips of the sepals are also shortly acuminate. The broad synsepal appears to be only two-veined. The transversely bilobed petals are narrowly oblong. The blades of the lip are similarly narrowly oblong, and the appendix is very small and ovoid-oblong.

**Lepanthes beatrizae** Luer & R. Escobar, Orquideología 20(3): 283-284, 1997.

Ety.: Named in honor of Beatriz López, manager of the collection of species at Colomborquídeas, El Retiro, Colombia.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 16-20 mm long, enclosed by 6-7 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-obovate, obtuse to rounded at the apex, 9-10 mm long, 7 mm wide, the base cuneate into a petiole ca. 1 mm long. **Inflorescence** a loose, successively 2- to 3-flowered raceme, up to 35 mm long including the filiform peduncle 20-25 mm long, borne far above the leaf; floral bracts oblique, muricate, 2 mm long; pedicels 3 mm long; ovary cristate-spiculate, 1 mm long; **sepals** translucent cream, lightly suffused with rose centrally, glabrous, low-spiculate-carinate, margins microscopically ciliate, the blade of the dorsal sepal ovate-triangular, subacute, 8 mm long, 6 mm wide, 3-veined, connate to the lateral sepals for 2.5 mm, the apex caudate, contracted into a slender cauda 4 mm long, the lateral sepals ovate, oblique, obtuse, connate 4 mm into a bifid synsepal, 8 mm long, 10 mm wide, each 3-veined, the diverging apices caudate, contracted into caudae 4 mm long; **petals** orange, microscopically cellular-pubescent, transversely bilobed, 0.8 mm long, 2.5 mm wide, the lobes oblong with rounded ends, the upper lobe larger; **lip** red, bilaminate, the blades microscopically pubescent, ciliate at the apices, elliptical with rounded ends, 1.3 mm long, the connectives broadly cuneate, the body broad, connate to the base of the column, with the appendix oblong, pubescent; **column** stout, 1 mm long, the anther apical and the stigma ventral.

**Norte de Santander:** below Santa Inéz, alt. 2200 m, collected with *Lepanthes echidion* Luer & R. Escobar by E. Valencia, May 1992, flowered in cultivation at Colomborquídeas, Nov. 1992, *R. Escobar 5382* (Holotype: MO), C. Luer illustr. 17156.

This species is known only from a single collection in the Eastern Cordillera of Colombia, cultivated at Colomborquídeas. It is one of the tiny species with giant flowers several times larger than the leaf. Only a very few flowers are produced successively far above the leaves. The sepals are slender-tailed; the petals are minute and transversely lobed; and the lobes of the lip are oblong, as is the pubescent appendix. *Lepanthes fonnegrae* Luer & R. Escobar is another tiny Colombian species with proportionally huge flowers with caudate sepals, but with two-veined lateral sepals; larger petals, the upper lobe obliquely truncate, the lower lobe narrowly triangular; and a smooth ovary.

**Lepanthes biglomeris** Luer & R. Escobar, Orquideología 19(1): 34-35, 1993.

Ety.: From the Latin *biglomeris*, "with two balls," referring to the upper lobes of the petals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-10 cm long, enclosed by 8-9 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly elliptical, acute, 5-5.5 cm long, 1-1.4 cm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a loose, distichous, successively several-flowered raceme, 3-4 cm long including the slender peduncle 1.5-2 cm

long, borne up the back side of the leaf; floral bracts minutely muricate, acute, 2 mm long; pedicels 1.5 mm long; ovary 1 mm long; **sepals** yellow, suffused with light red, glabrous, the dorsal sepal elliptical-ovate, obtuse, 3 mm long, 2.25 mm wide, 3-veined, slightly concave near the apex, margins smooth, connate to the lateral sepals for 0.5 mm, the lateral sepals flat, ovate, oblique, acute, diverging, 2.75 mm long, 1.25 mm wide, 2-veined, connate 0.5 mm, the margins denticulate; **petals** transversely bilobed, the lobes subcircular, the upper lobes red, overlapping, velvety pubescent, 1.5 mm long, 1.5 mm wide, the lower lobes red-orange, 0.5 mm long, 0.5 mm wide; **lip** red-orange, bilaminate, 1.4 mm long, the blades narrowly ovate, microscopically pubescent, with the apices narrowly obtuse, the connectives short but very broad, the body broad, connate to the undersurface of the column for half its length, the appendix pubescent, oblong, protruding as far forward as the tips of the blades of the lip; **column** slender, 2 mm long, the dilated apex protruding beyond the lip, the anther dorsal, the stigma apical.

**Santander:** El Taladro near Virolín, alt. 2400 m, collected by E. Valencia, Feb. 1991, flowered in cultivation at Colomborquídeas, 29 Dec. 1992, *R. Escobar 5122* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16567.

This species is similar to *Lepanthes hemirhoda* Garay, also found in the Eastern Cordillera of Colombia. Both are characterized by erect, narrowly elliptical leaves with loosely flowered racemes that do not reach the apex of the leaf. Both have flowers with petals with the upper lobes much larger than the lower lobes, but the single-veined lateral sepals of *L. hemirhoda* are smooth-margined. The blades of the lips of the two species are similarly narrowly ovate with acute apices, but the body of the lip of *L. hemirhoda* is narrow with the oblong appendix recessed within the sinus, rather than broad with a protruding sinus.

**Lepanthes biloba** Lindl., Companion Bot. Mag. 2: 356, 1836.

Ety.: From the Latin *bilobus*, "bilobed," referring to the lip.

Syn.: *Lepanthes otostalix* Rchb. f., Bonplandia 3: 241, 1855.
Ety.: From the Greek *otostalyx*, "a column with ears," referring to the column and petals.

Syn.: *Lepanthes peniculus* Luer, Phytologia 54: 362, 1983.
Ety.: From the Latin *peniculus*, "a small organ," in reference to the appendix.

Syn.: *Lepanthes metaxy* Luer & Hirtz, Orchidee (Hamburg) 42: 185, 1991.
Ety.: From the Greek *metaxy*, "the middle," referring to the features intermediate among *L. biloba, L. electilis* Luer, and *L. elongata* Luer & Hirtz.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender to stout, erect, 3-37 cm long, enclosed by 5-17 minutely ciliate-scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-oblong to elliptical-ovate, 3-8 cm long, 1-2.5 cm wide, the apex acute to obtuse, shortly or slightly acuminate, the base cuneate, contracted into a petiole 3-7 mm long. **Inflorescence** racemose, 1-5 loose, flexuous to nearly strict, flexible, successively many-flowered racemes up to 23 cm long including the filiform peduncle 1-2 cm long; floral bracts 1.5-2 mm long; pedicels 1-2 mm long; ovary 1.5 mm long; **sepals** yellow, yellow-green, purple or brown, glabrous, ovate, subacute to obtuse, usually shortly acuminate, margins smooth, the dorsal sepal 3.5-7 mm long, 2.3-3.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, 3.5-7 mm long, connate 1.5-3 mm into a broadly ovate, bifid synsepal, 3-5 mm wide, each 2-veined; **petals** bright purple, red, orange or brown, minutely pubescent, transversely bilobed, 0.6-1 mm long, 1.8-5 mm wide, the lobes subequal, triangular with obtuse to acute apices, sometimes long-acuminate, the lower lobe slightly smaller; **lip** bright purple, red, or orange, minutely pubescent, bilaminate, the blades elliptical or ovate, convex, 1-2 mm long, the apices narrowly obtuse, the bases rounded, the connectives broadly oblong, short, the body broad, connate to the column near the base, the appendix oblong, long-pubescent, with apex variably rounded; **column** 1.5-2 mm long, the anther dorsal, the stigma ventral.

**Risaralda:** La Linea, alt. 3280 m, collected by R. Escobar 3762, flowered in cultivation at Colomborquídeas, 18 March 1989, *C. Luer 14222* (MO); same area, 2900 m, collected by R. Escobar 3773, flowered in cultivation at Colomborquídeas, 18 March 1989, *C. Luer 14224* (MO).

**Cauca**: Mun. Silvia, epiphytic in Páramo de Guanacas northeast of Popayán, alt. 3150 m, 15 Nov. 1982, *C. Luer & R. Escobar 8420* (SEL).

**Putumayo:** between La Cocha and Sibundoy, alt. 2800 m, collected by R. Escobar, E. Valencia and H. Volles, June 1987, flowered in cultivation at Colomborquídeas, 3 January 1993, *R. Escobar 5218* (MO).

Also Ecuador (Pichincha, Holotype, *Hall s.n.*: K; holotype of *L. otostalix, Jameson 266*: G; Esmeraldas; Carchi; Sucumbíos, holotype of *L. peniculus*, *C. Luer, J. Luer & A. Hirtz 4672*: SEL; Imbabura; Napo; Cotopaxi; Tungurahua, holotype of *L. metaxy*, *A. Hirtz 1981*: MO; Pastaza; Morona-Santiago; Loja).

*Lepanthes biloba* is one of the more frequently encountered species of the genus in the Andes. It varies both vegetatively and florally. The inflorescence of Lindley's type is incompletely developed, being no longer than the leaf. The shape of the leaf varies from oblong and obtuse to narrowly ovate and acute, with all intermediate shapes commonly being found throughout the distribution. Some forms grade into *L. elongata*.

The loose, flexuous racemes sometimes begin flowering when shorter than the leaf, but continue lengthening to far surpass the leaf. The flowers are small, bilabiate, and variable in color, but are often yellow with small, red or purple petals and lip. The degree of pubescence of the petals and lip varies. The lobes of the petals are triangular, but often the apices are acuminate. The body of the lip is broad, connate to the column near the base. The appendix is small, pubescent, and oblong with the tip rounded but sometimes bilobed.

The large form with narrower, acute leaves and acuminate petals was segregated as *Lepanthes metaxy*, but examination of numerous specimens from numerous localities shows that all degrees of intermediates are common. *Lepanthes elongata* bears similar flowers but on strict, long-pedunculate inflorescences.

**Lepanthes binaria** Luer & Hirtz, Orchidee (Hamburg) 38(6): 291, 1987.

Ety.: From the Latin *binarius*, "consisting of two parts," referring to the bilobed petals.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-23 cm long, enclosed by 6-14 dark brown, microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** erect, suffused with purple beneath, coriaceous, convex, oblong, obtuse, abruptly acuminate, 3-6 cm long, 1.5-2.5 cm wide, the rounded base contracted into a petiole 4-5 mm long. **Inflorescence** a very congested, successively many-flowered raceme up to 12 mm long, borne on the concave, back surface of the leaf by a filiform peduncle 12-20 mm long; floral bracts oblique, 1 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** white, sometimes suffused with red, glabrous, broadly ovate to subcircular, margins smooth, the dorsal sepal obtuse, abruptly apiculate, 4 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, obtuse, abruptly acute, diverging, 3.5 mm long, 2 mm wide, 2-veined, connate 1.5 mm; **petals** white, sometimes suffused with yellow, microscopically pubescent, transversely bilobed, 1.5 mm long, 3.25 mm wide, the lobes subequal, subcircular; **lip** rose, bilaminate, the blades minutely pubescent, oblong with rounded ends, 1.75 mm long, the connectives broadly oblong from the base of the blades, connate to the base of the column, the sinus acute with a minute, oblong appendix pubescent on the end; **column** 1.5 mm long, the anther and stigma ventral.

**Nariño:** epiphytic in cloud forest east of La Victoria, alt. 3200 m, 4 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4651* (SEL).

Also Ecuador (Carchi, Holotype, *Luer et al. 11080*: MO).

This species occurs in northernmost Ecuador and adjacent Colombia. The most distinctive feature is the pair of proportionally large, bilobed petals, each lobe more or less round. The small, white flowers are borne within the concavity of the under surface of the leaves. The plants grow in high altitude, cool, wet cloud forests in the company of several other species of *Lepanthes*. *Lepanthes ballatrix*,

from Ecuador and southern Colombia, shares petals with subcircular lobes but differs with much longer, yellow sepals reaching seven millimeters in length.

**Lepanthes bipinnatula** Luer & R. Escobar, Orquideología 20(3): 284-286, 1997.

Ety.: From the Latin *bipinnatulus*, "with two little feathers," referring to the appendix.

**Plant** small, epiphytic, caespitose; roots comparatively coarse. Ramicauls slender, suberect, 9-10 cm long, enclosed by 12-14 closely fitting, microscopically scabrous lepanthiform sheaths with long-acuminate apices. **Leaf** spreading to pendent, coriaceous, narrowly elliptical-ovate, acute, with recurved margins, suffused with purple beneath, 4 cm long, 7-8 mm wide with the margins recurved, the base cuneate, contracted into a petiole ca. 1 mm long. **Inflorescence** a congested, subsecund, successively several-flowered raceme up to 7 mm long, borne on top of the leaf, 2 commonly simultaneously, by filiform peduncles 7-24 mm long; floral bracts 1 mm long; pedicels 2-2.5 mm long; ovary 2 mm long; **sepals** reddish orange-brown, membranous, 3-veined, carinate, widely spread, margins denticulate, the dorsal sepal broadly ovate, subcircular, rounded and slightly concave at the apex, minutely apiculate, 4 mm long, 3.5 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, 4 mm long, 2.25 mm wide, connate 1 mm; **petals** brown, finely ciliate-pubescent, transversely bilobed, 0.5 mm long, 5 mm wide, the lobes narrowly triangular, acute, the upper lobe longer than the lower lobe; **lip** brown, bilaminate, the blades microscopically ciliate-pubescent, elliptical, with the ends rounded, 1.5 mm long, the connectives short, narrowly oblong, the body connate to the base of the column, the sinus obtuse, with the appendix in two parts, one above the other, both slender, elongated, long-pubescent; **column** 2 mm long, the anther apical and the stigma subapical.

**Antioquia:** epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17653* (Holotype: MO).

Vegetatively, this species resembles the widely distributed *Lepanthes mucronata* Lindl., with a narrow leaf with recurved sides, borne horizontally or pendently by a very slender ramicaul. Commonly two simultaneous racemes are borne on top of the leaf by short and long peduncles. The flowers, however, do not show any close relationship to the "mucronata complex." The sepals of *L. bipinnatula* are obtuse, denticulate, and three-veined. The lobes of the petals are narrowly triangular and acute. The blades of the lip are free and elliptical, with the long-ciliate-pubescent appendix in two vertical parts in the sinus.

Several other species of *Lepanthes* share the characteristic petals with an elongate, narrowly triangular upper lobe, nearly as long as the dorsal sepal, and longer than the similarly shaped lower lobe. From them, *L. bipinnatula* is distinguished by its three-veined lateral sepals, and a lip shorter than the protruding column, with a slender, two-part appendix.

**Lepanthes bitriangularis** Luer & R. Escobar, Selbyana, 30(1): 5, 2009.

Ety.: From the Greek *bitriangularis*, "with two triangles," referring to the lobes of the petals.

**Plant** large, epiphytic, caespitose. Ramicauls stout, erect, 15-16 cm long, enclosed by 10-11 glabrous, tubular lepanthiform sheaths, obliquely dilated at the orifice. **Leaf** coriaceous, erect, elliptical-ovate, acute, acuminate, 10 cm long, 3.5 cm wide, the base rounded, contracted into a petiole 3 mm long. **Inflorescence** a sublax, successively many-flowered raceme 10 or more centimeters long including the slender peduncle 3.5 cm long behind the leaf; floral bracts 2 mm long; pedicels 2 mm long; ovary 2 mm long, ribbed; color of flowers not recorded, **sepals** glabrous, margins smooth, the dorsal sepal triangular, acute, shortly acuminate, 6 mm long, 5.5 mm wide, 3-veined, connate 2 mm to the lateral sepals, the lateral sepals connate 2.5 mm into a broadly ovate, bifid synsepal 6 mm long, each sepal 3 mm wide, 2-veined, the apices obtuse, shortly acuminate, diverging; **petals** microscopically pubescent, transversely bilobed, 1.5 mm long, 3 mm wide, 1-veined, the lobes subequal, obliquely triangular, acute, ca. 1.5 mm long, 1.5 mm wide; **lip** bilaminate, microscopically pubescent, the blades ovate, narrowly obtuse at the apex, rounded at the base, convex, 2.25 mm long, the connectives cuneate, the body nearly 1 mm broad, connate to the column at the base, the appendix

minute, pedunculate, microscopically bilobulate at the tip; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Nariño:** forest near La Cocha, collected by R. Escobar, Feb. 1979, flowered in cultivation at Colomborquídeas, Medellín, May 1993, *R. Escobar 5220* (Holotype: MO), C. Luer illustr. 16566.

This large species, apparently endemic in southern Colombia, is similar in habit to *Lepanthes caudatisepala* C. Schweinf., but differs primarily in having flowers with smaller petals, with the two lobes similar and triangular with acute apices. In addition, the sheaths of the ramicauls are glabrous, and the raceme is subdensely flowered instead of congested. The flowers resemble those of the variable *L. biloba*, but are borne by an inflorescence with a much longer peduncle, three and one-half centimeters in length rather than one to two centimeters in length; and the ramicauls of *L. bitriangularis* are clad in glabrous sheaths, while those of *L. biloba* are minutely scabrous-ciliate.

**Lepanthes boyacensis** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(8): 820, 1984.

Ety.: Named for the Department of Boyacá where the species was discovered.

**Plant** small, epiphytic, caespitose; roots coarse. Ramicaul slender, erect, 2-3 cm long, enclosed by 3-5 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 15-21 mm long, 8-9 mm wide, the base cuneate into a petiole ca. 1 mm long. **Inflorescence** an erect to arching, flexuous, successively flowered raceme up to 15 mm long, borne by a filiform peduncle 15-25 mm long; floral bracts 1.5 mm long, echinate; pedicels 2 mm long, clavate; ovary 1.25 mm long, the ribs crested; **sepals** red-orange, glabrous, margins smooth, ovate, carinate, the apices obtuse, shortly acuminate, shortly caudate, the dorsal sepal 11-12 mm long, 8-9 mm wide, 3-veined, connate to the lateral sepals for 2.5 mm, the lateral sepals oblique, diverging, 11-12 mm long, 5-6 mm wide, connate 3.5 mm, 2-veined; **petals** dark red-orange, microscopically pubescent, transversely bilobed, 1 mm long, 5 mm wide, the lobes oblong, obtuse, about equal in length; **lip** dark red-orange, microscopically pubescent, the blades oblong, concave, 2 mm long, with the apices acute and the bases rounded, the connectives cuneate from the bases of the blades, the body narrow with a membranous appendix 0.3 mm long, terminated by a tuft of hairs; **column** purple, stout, 1.5 mm long, the anther dorsal, the stigma ventral.

**Boyacá:** south of Sogamoso, collected March 1972 by J. Velasquez, flowered in cultivation at Colomborquídeas, 23 Apr. 1983, *C. Luer 8777* (Holotype: SEL).

This large-flowered but little species is similar to several vegetatively small species with sepals about one centimeter long. It is distinguished from *Lepanthes beatrizae* and *L. fonnegrae* by sepals with very short, rather than long, caudae. The lateral sepals of the similar *L. amplior* are tailless and subacute, and the longer lower lobe of the petals is narrowly triangular.

**Lepanthes brevipedicellata** Luer, R. Escobar & Thoerle, Harvard Pap. Bot. 16(2): 323, 2011.

Ety.: From the Latin *brevipedicellata*, "with short pedicels," referring to the abbreviated pedicels.

**Plant** very small, epiphytic, caespitose; roots fleshy. Ramicauls slender, erect, 7-10 mm long, enclosed by 3-4 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 11-13 mm long, 7 mm wide, the base rounded, contracted into a petiole 2 mm long. **Inflorescence** a subcongested, successively flowered raceme of up to 13 flowers, 9 mm long, borne beyond the leaf by a minutely, sparsely pubescent peduncle 12-18 mm long; floral bracts spiculate, 1 mm long; pedicels 0.5 mm long; ovary 1 mm long with papillose ribs; **sepals** red-purple with dull orange veins, membranous, glabrous, ovate, acute, slightly acuminate, carinate, margins minutely ciliate, the dorsal sepal 7 mm long, 4.25 mm wide, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals oblique, diverging, each 7.5 mm long, 3.5 mm wide, 2-veined, connate 3 mm; **petals** yellow with red margins, microscopically

pubescent, transversely bilobed, 1 mm long, 3.75 mm wide, the upper lobe oblong, rounded at the apex, 1.8 mm long, 1 mm wide, the lower lobe narrowly oblong-subtriangular, obtuse, 1.8 mm long, 0.9 mm wide; **lip** red, bilaminate, the blades flat, oblong with the ends rounded, microscopically pubescent, ciliate at the apices, 1.2 mm long, the connectives broadly triangular, connate to the base of the column, the sinus broad with the appendix small, oblong, ciliate, with a minute apical process; **column** 1 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** between Alto de Pozo and Villa Caro, alt. 2000 m, collected May 1982 by R. Escobar, D. Portillo, J. and C. Luer, *R. Escobar 3246*, flowered in cultivation at Colomborquídeas, May 1984, *C. Luer 10041* (Holotype: MO).

This species is known from one collection in the Eastern Cordillera. It shares a very small size; elliptical, obtuse leaves; and proportionally large flowers with some forms of *Lepanthes norae* Foldats. *Lepanthes brevipedicellata* is usually even smaller in size, but the roots are thicker than the ramicauls. The pedicels are very short, less than half a millimeter long, rather than one and one-half millimeters or more long. The ovary is papillose along the ribs, rather than smooth or spiculate. The sepals of the proportionally large flowers are membranous and acute. The lobes of the petals are about equally long with the upper lobe twice as wide, while those of *L. norae* are subequal in size and shape. The blades of the lip are oblong and borne by broadly triangular connectives, and the appendix is small and pubescent with a minute apical process.

**Lepanthes cacique-tone** Luer & R. Escobar, Orquideología 20(3): 286-287, 1997.

Ety.: Named for the local Indian chief Toné, murdered by the Spaniards in 1570.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-7 cm long, enclosed by 9-14 microscopically scabrous, closely fitting lepanthiform sheaths with acuminate apices. **Leaf** spreading, thinly coriaceous, elliptical, acute, acuminate, 4-5.5 cm long, 1.2-2 cm wide, the base cuneate, contracted into a petiole less than 1 mm long. **Inflorescence** a congested, secund, long-pedicellate, successively many-flowered raceme up to 20 mm long, borne on top of the leaf by a filiform peduncle 6-35 mm long; floral bracts 1 mm long; pedicels 3-4 mm long; ovary 2.5 mm long; **sepals** rose, membranous, glabrous, carinate, margins minutely denticulate, the dorsal sepal ovate, acute, 6 mm long, 3.25 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, diverging, acute, 6 mm long, 2.5 mm wide, 2-veined, connate 1.5 mm; **petals** deep red, microscopically pubescent, transversely bilobed, 0.75 mm long, 2.5 mm wide, the lobes obliquely triangular, lower lobe longer and narrower than upper, the tips of the upper lobes overlapping; **lip** deep red, bilaminate, the blades finely pubescent, ovate, 1.6 mm long, with bases rounded, apices narrowly rounded, ciliate, the connectives narrowly cuneate, the body connate to the base of the column, the sinus obtuse, with a small, triangular, membranous appendix in apposition to a cylindrical process from the stigma; **column** 1.5 mm long, the anther dorsal and the stigma ventral.

**Antioquia:** epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17641* (Holotype: JAUM; Isotype: MO); same area, 23 May 1995, *C. Luer 17552* (MO).

This species is apparently endemic in the Western Cordillera of Colombia, where it has been found at a mountain pass. The flowers are reminiscent of those of *Lepanthes dunstervilleorum*, which is found in western Venezuela and the Eastern Cordillera and the Central Cordillera of Colombia. Although the leaves of the two species are similar in size and shape, the ramicaul of *L. dunstervilleorum* is stout while that of *L. cacique-tone* is shorter and much more slender. The pedicels of *L. dunstervilleorum* are distichous and short, often shorter than the floral bracts, while the pedicels of *L. cacique-tone* are densely secund and elongate. The flowers of the two species are very similar, except that the petals of *L. cacique-tone* are proportionally smaller with the tips of the upper lobes overlapping.

## **Lepanthes cactoura** Luer & R. Escobar, Orquideología 18(1): 28, 1991.

Ety.: From the Greek *kaktos* and *-oura*, "a cactus-like tail," referring to the thick, cylindrical, pubescent appendix.

**Plant** medium to large in size, epiphytic, caespitose; roots fine. Ramicauls slender, erect, 6-20 cm long, enclosed by 10-15 minutely ciliate, long-acuminate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, more or less reticulate, narrowly ovate, with the apex acute, acuminate, 5-7 cm long, 1.5-2.2 cm wide, the base broadly cuneate into a petiole 1 mm long. **Inflorescence** a very congested, successively many-flowered raceme up to 10 mm long, borne on the dorsum of the leaf by a filiform peduncle 15-25 mm long; floral bracts 1.5 mm long; pedicels 4 mm long; ovary lightly crested, 2 mm long; **sepals** translucent white, glabrous, margins minutely denticulate, the dorsal sepal broadly ovate, obtuse, 3.5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, 3.5 mm long, 1.75 mm wide, connate 1 mm, each 2-veined; **petals** cream with brown tips and red-brown inner margin, microscopically pubescent, transversely bilobed, 1 mm long, 3 mm wide, with a small apiculum on the lateral margin near the middle, the upper lobe suboblong, truncate, the upper edge more or less minutely erose, the lower lobe triangular, acute, obtusely angled on the outer margin, shorter than the upper lobe; **lip** red-brown with a white stripe on each side, bilaminate, the blades thin, microscopically pubescent, semicircular with rounded apices and obtuse bases, 1.4 mm long, adherent over the column, the connectives broadly cuneate, the body narrow, connate to the column at the base, the appendix thick, pubescent, terete to subconical, with a small, similar apical segment; **column** slender, 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Mesopotamia, epiphytic in cloud forest between La Unión and Sonsón, alt. 2400 m, collected by L. Moreno de Posada, C. Head & F. López, 25 Aug. 1984, flowered in cultivation at Colomborquídeas, 26 Aug. 1984, *R. Escobar 3399* (Holotype: MO), C. Luer illustr. 10469; road between La Unión and Sonsón, alt. 2400 m, collected by E. Valencia, 1992, flowered in cultivation at Colomborquídeas, 21 Dec. 1992, *R. Escobar 5059* (MO).

**Colombia:** locality unknown, collected by J & L Orchids, September 1984, flowered in cultivation by H. P. Jesup in Bristol, Connecticut, 10 Dec. 1988, *C. Luer 13785* (MO).

This species is another of several that seem closely related to *Lepanthes agglutinata*, with thin blades of the lip adherent over the column. *Lepanthes cactoura*, however, is distinguished by a small apiculum between the lobes of the petals rather than a slender, descending process; broadly cuneate connectives of the lip, instead of very narrow connectives supporting the blades above the middle; and a large, thick, cylindrical, pubescent appendix.

## **Lepanthes caesariata** Luer & R. Escobar, Orquideología 19(2): 82, 1994.

Ety.: From the Latin *caesariatus*, "with long hair," referring to the petals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 9-11 cm long, enclosed by 10-11 microscopically scabrous lepanthiform sheaths. **Leaf** suberect, coriaceous, ovate, acute, lightly acuminate, 28-35 mm long, 12-15 mm wide, the base rounded to cuneate, contracted into a petiole 2 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme, up to 6 mm long, borne behind the leaf by a filiform peduncle 6-15 mm long; floral bracts 1-1.5 mm long; pedicels 1.5-2 mm long; ovary 1 mm long; **sepals** dull green, glabrous, broadly ovate, obtuse, margins smooth, the dorsal sepal 3 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.8 mm, the lateral sepals oblique, connate 1.4 mm into a transversely ovate, bifid synsepal with apices diverging, 2.8 long, 3.5 mm wide, each 2-veined; **petals** orange with the upper edge purple, densely long-pubescent-ciliate, transversely bilobed, 1 mm long, 3 mm wide, 3-veined, the lobes opposite, oblong, oblique, obtuse, the upper lobes overlapping, slightly larger than the lower lobe; **lip** lavender, bilaminate, the blades thin, microscopically pubescent, oblong, 1.5 mm long, with the ends subtruncate, adherent medially over the column, the connectives oblong, from below the middle, the body broad, connate to the base of the column, the sinus broadly rounded, protuberant, with the appendix short, oblong, pubescent; **column** 1.5 mm long, with the anther and the bilobed stigma apical.

**Chocó:** Carmen de Atrato, alt. 2000 m, road to Guaduas, collected by E. Valencia, Nov. 1990, flowered in cultivation at Colomborquídeas, 5 May 1993, *C. Luer 16733* (Holotype: MO).

This medium-sized species from the Western Cordillera is distinguished by more or less spreading, ovate, lightly acuminate leaves bearing the short, congested raceme underneath. The sepals are broad and obtuse. The transverse petals are densely long-pubescent. The thin, oblong blades of the lip are supported by oblong connectives from the basal thirds and adhere to each other medially. The body is rounded and protuberant with a pubescent, oblong appendix at its summit. The stigma is transversely bilobed as seen in *Platystele* Schltr., *Stelis* and a number of other pleurothallids.

**Lepanthes calimae** P. Ortiz, Orquideología 2(1): 69, 1998.

Ety.: Named for the area of the Calima dam site near Cali, where the species was collected.

**Plant** very small, epiphytic, caespitose; roots proportionally thick. Ramicauls abbreviated, erect, 2-3 mm long, enclosed by 2 ribbed sheaths with the margins of the oblique ostia microscopically scabrous. **Leaf** erect, coriaceous, elliptical, obtuse, mucronate, 6-11 mm long, 3.5-4.5 mm wide, the base cuneate into a petiole ca. 1 mm long. **Inflorescence** a loose, successively few-flowered raceme up to 8 mm long, borne beyond the leaf by a filiform peduncle 15-25 mm long; floral bracts 1.5 mm long, sparsely ciliate; pedicels 2-2.5 mm long; ovary 0.8 mm long; **sepals** glabrous, carinate, narrowly ovate, long-acuminate, acute, margins microscopically ciliate, the dorsal sepal rose, 8-9.5 mm long, 1.5-1.8 mm wide, 3-veined, free from the lateral sepals, the lateral sepals similar, rosy white, diverging, connate 1.5 mm, each 2-veined; **petals** glabrous, 1 mm wide at the base, bifurcated into linear lobes 1 mm above the base, the segments equal, capillary, diverging ca. 45°, 7-8.5 mm long, the upper segment rose, the lower segment light yellow; **lip** light yellow, glabrous, bifurcate less than 1 mm above the base, with a minute, triangular angle in the sinus between the lobes, the lobes narrowly long-acuminate, 7.5 mm long, 1 mm wide, 2-veined, with the margins slightly revolute in the basal half, the base connate to the base of the column; **column** terete, 1 mm long, the anther and the stigma apical.

**Valle del Cauca:** Represa de Calima, alt. ca. 1500 m, June 6 1996, *P. Ortiz, J. H. Ramírez & J. A. González 1090* (Holotype: COL); Represa de Calima, collection data unknown, *R. Escobar 8167*, C. Luer illustr. 18415.

This species is endemic in southern Colombia where it has been discovered on several occasions, each time in association with *Lepanthes tsubotae* Luer & R. Escobar. It is distinguished by its very small size, with ramicauls less than three millimeters long enclosed by two ribbed sheaths that are microscopically scabrous on the oblique, thickened margins. The elliptical leaves are mucronate at the apex. The inflorescence is a few-flowered raceme of successive, spindly, white flowers that look like minute spiders held above the smaller leaf. The petals are bifurcate above the base into capillary processes. The unique lip is similarly bifurcate above the base into narrowly ovate, attenuate lobes. In the sinus between the lobes is a minute, triangular lobule that could be considered the appendix. The column is short with the anther, rostellum, and stigma apical.

The similar *Lepanthes filamentosa* Luer & Hirtz was recently located in the same department, and shares the minute size and pale flowers with long-attenuate sepals and bifurcated petals. *Lepanthes filamentosa* is distinguished by single-veined lateral sepals and a lip with auricular lobes.

**Lepanthes callisto** Luer & Hirtz, Orchidee (Hamburg) 38(6): 287-289, 1987.

Ety.: Named for the Greek nymph Kallisto who was turned into a bear, in allusion to the dark, coarsely pubescent lepanthiform sheaths.

**Plant** medium to large in size, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 5-20 cm long, enclosed by 6-13 blackish, coarsely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, remarkably convex, dark green, purple beneath, oblong, subacute to obtuse, abruptly short-acuminate, 4-6.5 cm long, 2-3.8 cm wide, the rounded base contracted into a petiole 4-5 mm long. **Inflorescence** a very

congested, distichous, successively many-flowered raceme up to 22 mm long, borne on the concave, back surface of the leaf by a filiform peduncle 20-35 mm long; floral bracts oblique, imbricating, 1.5 mm long; pedicels 1.5 mm long; ovary 3 mm long; **sepals** dark red-purple, margins smooth, 3-veined, the dorsal sepal glabrous, triangular, concave, acute, 7.5-9 mm long, 5-7 mm wide, connate to the lateral sepals for 2 mm to form a lightly to deeply concave flower, the lateral sepals pubescent within, broadly ovate, oblique, obtuse, abruptly acute, apiculate, diverging, 7-9.5 mm long, 5.5-7 mm wide, concave below the middle, convex above the middle, connate 3 mm; **petals** orange, suffused with red medially, minutely pubescent, transversely bilobed, 1 mm long, 5 mm wide, the upper lobe narrowly triangular, acute, much larger than the lower lobe, the lower lobe oblique, triangular, obtuse; **lip** orange, bilaminate, the blades glabrous, narrowly ovate, acute at the apex, 2.25 mm long, the connectives thick, broadly oblong from the base of the blades, connate to the base of the column, the sinus broad with the appendix reduced to a membranous margin appressed to the stigma; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Nariño:** La Planada, purchased from a collector, flowered in cultivation at Colomborquídeas, Medellín, 5 July 1996, *C. Luer 17949* (MO).

Also Ecuador (Carchi, Holotype, *C. Luer et al. 11076*: MO; Pichincha; Tungurahua).

This unique species from the Andes of southern Colombia and northern Ecuador is easily recognized by the stout ramicaul enclosed by dark, coarsely ciliate lepanthiform sheaths. The thickly coriaceous, dark green leaf is convex, with the comparatively large, dark purple flower borne in the concavity of the undersurface of the leaf, which is intensely suffused with purple. The lateral sepals are three-veined and pubescent. The dark niche behind the leaf attracts spiders searching for a refuge for their tiny webs. The plants grow in the darker, more sheltered ravines of high-altitude cloud forests.

**Lepanthes calodictyon** Hook., Bot. Mag. 5259, 1861.

Ety.: From the Greek *calodictyon*, "a beautiful net," referring to the reticulated leaves.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, slender, 1.5-3.5 cm long, enclosed by 5-11 microscopically ciliate lepanthiform sheaths. **Leaf** spreading, thinly coriaceous, light green, heavily reticulated with purple, subcircular to broadly ovate, broadly obtuse, 10-25 mm long, 8-25 mm wide, the margins undulate outside a marginal vein, the base rounded, abruptly contracted into a petiole ca. 1 mm long. **Inflorescence** a congested, subsecund, successively several-flowered raceme up to 4 mm long, borne on top of the leaf by a filiform peduncle 2-6 mm long; floral bracts 0.5-1 mm long; pedicels 1-1.5 mm long; ovary 1.5-2 mm long; **sepals** red with yellow margins, glabrous, strongly reflexed, free, carinate, margins sparsely ciliate, the dorsal sepal obovate, obtuse, 1.5-4 mm long, 1.25-2.25 mm wide, 3-veined, the lateral sepals ovate, oblique, subacute, shortly acuminate, diverging, 1.75-4 mm long, 1-1.75 mm wide, 2-veined; **petals** red to purple, microscopically pubescent, ciliate, transversely bilobed, 0.5-1 mm long, 1.25-2 mm wide excluding caudae, the upper lobe ovate, oblique, with apex acute, acuminate-caudate, the cauda 0.5-3 mm long, the lower lobe transversely ovate, oblique, the rounded apex abruptly contracted at the base into a cauda 1.25-3 mm long; **lip** red, minutely pubescent, transversely oblong-reniform, shallowly retuse, 0.66-1 mm long, 1.25-2 mm wide, connate to the column near the middle; **column** clavate, 0.75-1.25 mm long, the anther and the stigma apical.

**Antioquia:** Parque Nacional Natural "Las Orquídeas," Sector Venados, margen derecha del camino hacia Venados arriba, 900 m, 7 June 1988, *A. Cogollo, J. Ramírez & O. Alvarez 3367* (MO).

**Valle del Cauca:** old road from Cali to Buenaventura, 800 m, collected by E. Valencia 1991, flowered in cultivation at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5166* (MO).

**Colombia:** without collection data, purchased by Sra. Lupe de Dreyfus at the Cali Orchid Show, 1984, flowered in cultivation in El Valle, Panama, 20 Feb. 1985, *C. Luer 10647* (MO).

Also Ecuador (Chimborazo, Holotype, *R. Spruce s.n.*: K; Esmeraldas; Pichincha; Cotopaxi; Bolívar).

This species is widely distributed in the Andes through the Western Cordillera of Colombia and the western declivity of Ecuador. It is well known and widely cultivated for the attractive reticulated foliage as well as the intricate flower. It was

first illustrated in Curtis's Botanical Magazine, where Hooker published the original description.

*Lepanthes calodictyon* is famous for the broad, green leaves with a purple network of veins and ruffled or scalloped margins. The flower sits on top with reflexed sepals exposing red, long-tailed petals. The lip is reniform beneath the column. Variations in the size, margins and markings of the leaves are seen throughout its range.

**Lepanthes canaliculata** Luer & R. Escobar, Orquideología 20(3): 287-289, 1997.

Ety.: From the Latin *canaliculatus*, "longitudinally concave," referring to the mature leaf.

**Plant** small, weak, epiphytic, caespitose; roots slender. Ramicauls slender, erect, immature ca. 10 mm long, mature to 40 mm long, enclosed by 6-7 microscopically ciliate lepanthiform sheaths. **Leaf** coriaceous, the immature leaf erect, elliptical, subacute, flat, ca. 10 mm long, 3 mm wide, the base subsessile, the mature leaf more or less horizontal, narrowly linear, acute, canaliculate with involute sides, up to 40 mm long, 1.5 mm wide unexpanded, the base subsessile. **Inflorescence** a congested, distichous, successively few-flowered raceme, up to 2 mm long, borne by a filiform peduncle 6-7 mm long, within the channel on the dorsum of the leaf; floral bracts 0.5 mm long; pedicels 2 mm long; ovary 1 mm long; **sepals** purplish tan, glabrous, carinate-spiculate, margins denticulate, the dorsal sepal oblong-ovate, acute, 4.75 mm long, 1.5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals connate 1.25 mm, elliptical, oblique, acute, 3.5 mm long, 2.6 mm wide together, with the apices in apposition, each 2-veined; **petals** red-brown, pubescent, transversely bilobed, 0.75 mm long, 4.5 mm wide, 3-veined, the lobes diverging, subequal, narrowly triangular, oblique, acute, acuminate, with a filamentous marginal process between the lobes, 0.75 mm long; **lip** red-brown, bilaminate, the blades pubescent, elliptical-oblong with the ends narrowly rounded, 2 mm long, the connectives short, broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse with the appendix discoid, shallowly concave, apiculate, ciliate; **column** 2 mm long, with the anther dorsal and the stigma ventral.

**Chocó:** above San José del Palmar, Alto de Los Galápagos, epiphytic in cloud forest, alt. 2100 m, collected by A. de Wilde, flowered in cultivation at his home above Pereira, 10 May 1993, *C. Luer 16739* (Holotype: MO); Alto de Los Galápagos, at the pass between Valle del Cauca and Chocó, alt. 2050 m, 13 May 1993, *C. Luer, J. Luer, R. Escobar, A. de Wilde & J. Gómez 16798* (MO).

This rare species occurs as a twig epiphyte in a wet, windy pass between the departments of Chocó and Valle del Cauca. It is distinguished by the very narrow, longitudinally concave leaf only one and one-half millimeters in diameter. The sides curve up so that the dorsum of the leaf is the bottom of the channel. The base is subsessile with the peduncle borne within the channel. Immature leaves are much shorter, flat, and twice as broad.

The sepals are denticulate, the approximate laterals conspicuously so. The transverse lobes of the petals are pubescent and acuminate with a filamentous middle lobe between them. The pubescent blades of the lip are elliptical with short, broad connectives. The appendix is discoid and shallowly concave like a human red blood cell.

The leaves of *Lepanthes aciculifolia* are also narrowly linear, but terete and shallowly channeled. The smaller flowers are distinguished by lateral sepals with spreading apices, and petals with oblong lobes with a small marginal lobule.

**Lepanthes carrilloi** Luer & Thoerle, Harvard Pap. Bot. 16(2): 325, 2011.

Ety.: Named in honor of Arturo José Carrillo of Bogotá, Colombia, collector of this species.

**Plant** medium in size, epiphytic, caespitose; roots unknown. Ramicauls slender, erect, 7-15 cm tall, enclosed by 8-9 lepanthiform sheaths with microscopically ciliate margins of the ostia. **Leaf** erect, coriaceous, elliptical, obtuse, shortly acuminate, 3.5 cm long, 1.5 cm wide, the rounded base contracted into a petiole 5 mm long. **Inflorescence** 2-3 loose, flexuous, successively flowered racemes up to 15

cm long, borne by a filiform peduncle 0.5-1 cm long; floral bracts 2 mm long; pedicels 1.5 mm long; ovary 1 mm long; **sepals** red, microscopically finely pubescent toward the base, margins smooth, the dorsal sepal ovate, acute, 3.5 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, acute, shortly acuminate, diverging, 3.5 mm long, 2.5 mm wide, 2-veined; **petals** red, pubescent, transversely bilobed, 0.5 mm long, 1.6 mm wide, lobes oblong-triangular, obtuse, the upper lobe 1 mm long, the lower 0.6 mm long, 0.4 mm wide; **lip** red, bilaminate, the blades microscopically pubescent, oblong, convex with rounded ends, 0.75 mm long, 0.4 mm wide, the connectives broadly oblong, the body broad, connate to the column with a broad claw above the base, the appendix broadly triangular with a minute terminal segment, densely long-pubescent; **column** thick, terete, 1.5 mm long, the anther apical, the stigma ventral.

**Cundinamarca:** alt. 2700 m, collected and cultivated by A. J. Carrillo 047-B, at his finca El Cartujo, Gachancipa, June 2009, *L. Thoerle 104* (Holotype: MO), C. Luer illustr. 21470.

This species is distinguished by long, flexuous, successively flowered racemes that far exceed the small, elliptical, shortly acuminate leaf. The flowers are also small with acute sepals, the laterals diverging and shortly acuminate. The petals are minute, transverse, and pubescent; and the convex blades of the lip are also minute with a long-pubescent appendix.

Superficially, the flowers resemble those of *Lepanthes macrostylis* Luer & R. Escobar, with spreading sepals and a large column protruding from between the small, rounded blades of the lip. The smaller flowers of *L. macrostylis* are borne in a short, congested raceme; the sepals are narrower; and the petals are larger.

**Lepanthes carunculigera** Rchb. f., Flora 69: 557, 1886.

Ety.: From the Latin *carunculiger*, "bearing caruncles," referring to the verrucose surface of the upper lobes of the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls suberect to horizontal, slender, 1.5-2.5 cm long, enclosed by 6-8 minutely ciliate lepanthiform sheaths. **Leaf** spreading or horizontal, coriaceous, suffused with purple beneath, satiny green above, elliptical-ovate, subacute, 15-21 mm long, 10-14 mm wide, the base broadly cuneate into a petiole ca. 1 mm long. **Inflorescence** a congested, successively 2- to 3-flowered raceme 15-20 mm long, borne on top of the leaf by a filiform peduncle 12-17 mm long; floral bracts 1.5 mm long, with a minutely ciliate crest; pedicels 2 mm long; ovary 2-3 mm long; **sepals** red-purple, glabrous, carinate-ciliate, margins minutely ciliate, the dorsal sepal with a transverse yellowish white band across the middle, broadly ovate, concave, obtuse, abruptly shortly acuminate, 10 mm long, 8 mm wide, 5-veined, connate to the lateral sepals for 3 mm, the lateral sepals with a longitudinal yellowish white band down the center, ovate, oblique, acute, more or less undulate, diverging, 10 mm long, 4 mm wide, 2-veined, connate 1 mm; **petals** olive green, glabrous, oblique, oblong, erect, 4.5 mm long, 2 mm wide, forked above the middle, the lower lobe merely an obtuse angle at the base, the upper lobe with a diagonal carina near the middle, with an acute, erect lobule above the middle on the outer margin, the apical portion rounded with the surface irregularly verrucose; **lip** olive green, glabrous, deeply cordate, lightly concave, the apex bifid into two rounded lobules, with a minute oblong appendix between on the outer surface, the basal lobes rounded, embracing the column, connate to the base of the column; **column** 2 mm long, the anther dorsal, the rostellum elongated, protruding, the stigma small, on the ventral surface of the rostellum near the apex.

**Colombia:** without collection data, *F. C. Lehmann 3213* (Holotype not designated, Lectotype designated here: *Reichenbach s. n.*: W 54517).

**Risaralda:** Mun. Pueblo Rico, La Linea, alt. ca. 2000 m, collected by E. Valencia, 16 Feb. 1985, flowered in cultivation at Colomborquídeas near El Retiro, 6 Apr. 1988, *C. Luer 13017* (MO); same area, alt. 2100 m, 11 May 1993, *C. Luer, J. Luer, R. Escobar & J. Gómez 16786* (MO).

This unusual species was first collected by Consul Lehmann over a century ago, but unlike most of his collections, no data other than "carunculigera" and his name accompanied the two specimens on a single sheet in Reichenbach's herbarium. On a second sheet, also devoid of legible collection information save for Lehmann's name and number, Reichenbach's very serviceable sketch is

mounted. Although this specimen has been cited as the holotype, it was not identified as such by Reichenbach, who specified only "Nov. Gran." in his original publication. We follow Reichenbach's intentions by declaring the herbarium sheet with his drawing as the lectotype. One hundred years later, *Lepanthes carunculigera* was rediscovered by Eladio Valencia in the Central Cordillera in the department of Risaralda.

The flower, gaping and large for the size of the plant, hangs over the edge of the horizontal leaf near the apex. The distinctive petals are erect and thick, typical for a member of *Lepanthes* sect. *Felinae,* and the upper lobe is incised with a small, erect lateral lobule. The greater part of the lobe is verrucose. The lip is hippocrepiform, with the basal lobes flanking the column. The plant and flowers of *L. quadricornis* Luer & R. Escobar are similar, but the latter is distinguished by petals forked near their bases.

**Lepanthes caudata** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(3): 260, 1984.

Ety.: From the Latin *caudatus*, "with a tail," referring to the caudate sepals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-22 mm long, enclosed by 3-5 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 7-14 mm long including a 2-3 mm long petiole, 6-8 mm wide, cuneate below into the petiole. **Inflorescence** a loose, flexible, flexuous, successively several-flowered raceme up to 11 cm long including the filiform peduncle 2-3 cm long; floral bracts 1-2 mm long, minutely spiculate; pedicels 1.5-2 mm long; ovary 1 mm long, the ribs lightly spiculate; **sepals** translucent purple to yellowish red, glabrous, ovate, obtuse, abruptly caudate, carinate-spiculate, margins fimbriate, the dorsal sepal 6-11 mm long including the 1-2.5 mm long cauda, 2.5-4.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, 6-12 mm long including the 1-2.5 mm long caudae, connate 2.5-6 mm, 4.5-9 mm wide together, each 2-veined; **petals** red-orange, microscopically pubescent, transversely bilobed, 1 mm long, 2.5-3 mm wide, the upper lobe oblong with the apex rounded, the lower lobe much smaller than the upper lobe, narrowly triangular, oblique; **lip** red orange, microscopically ciliate, bilaminate, the blades elliptical, lightly concave, with rounded ends, 1.5 mm long, the connectives thick, cuneate, from the basal half of the blades, the body narrow, connate to the base of the column, the appendix glabrous, thick, uncinate, the acute apex incurved; **column** stout, 1 mm long, the anther apical, the stigma ventral.

**Putumayo:** epiphytic in cloud forest between La Cocha and Sibundoy, alt. 3000 m, 12 Nov. 1982, *C. Luer & R. Escobar 8345* (Holotype: SEL); same area, 26 Jan. 1987, *C. Luer, J. Luer, C. H. Dodson, O. de Benavides, R. Escobar & E. Valencia 12529* (MO); Sibundoy, flowered in cultivation at Colomborquídeas, 20 Apr. 1983, *C. Luer 8742* (SEL); epiphytic in cloud forest, Alto de Santa Inéz, alt. 2200 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10355* (MO).

Also Ecuador (Zamora-Chinchipe).

This minute species has been found in cold, wet, scrubby cloud forests at high altitudes in widely separated localities in Colombia and southern Ecuador. It is characterized by loose racemes much longer than the tiny leaves. The size of the denticulate, caudate sepals is variable, those of some flowers being twice the dimensions of those of others. The petals and lip, however, remain constant. Among small species with a loose inflorescence and relatively large, caudate flowers, *Lepanthes caudata* is distinguished by sepals with fimbriate-erose margins.

**Lepanthes caudatisepala** C. Schweinf., Bot. Mus. Leafl. 10: 123, 1942.

Ety.: From the Latin *caudatisepalus*, "with caudate sepals," referring to the shortly acuminate sepals.

**Plant** large, epiphytic, shortly ascending, caespitose; roots coarse. Ramicauls stout, erect, 10-40 cm long, enclosed by 10-14 glabrous, closely fitting lepanthiform sheaths, microscopically ciliate on the margins of the upper ostia. **Leaf** erect, coriaceous, elliptical-ovate, acute, lightly acuminate, 7-12

cm long, 2-5 cm wide, the base rounded or broadly cuneate, contracted into a petiole 3-6 mm long. **Inflorescence** racemose, successively many-flowered, congested, up to 5 cm long including the peduncle 1.5-2 cm long, borne behind the leaf; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 2.5 mm long; **sepals** pale yellow, glabrous, carinate, margins smooth, ovate-triangular, acute, slightly acuminate, the dorsal sepal 6-7 mm long, 4-5 mm wide, 3-veined, connate to the lateral sepals for 1.5-2 mm, the lateral sepals oblique, diverging, 6.5-7 mm long, 3 mm wide, connate 1.5-2.5 mm, 2-veined; **petals** yellow with red inner margin, glabrous, transversely bilobed, 1-1.5 mm long, 3.5-4 mm wide, narrowed between the lobes, the lobes subequal, the upper lobe broadly ovate, the lower lobe narrowly obliquely ovate, with the ends rounded; **lip** bilaminate, the blades red-purple, elliptical, 2.25 mm long, glabrous, the rounded apices ciliate, the connectives shortly cuneate, the body broad, connate to the base of the column, the sinus obtuse, with a minute, biglandular appendix; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Cundinamarca:** Guatavita, alt. 3000 m, April 2009, collected and flowered in cultivation by L. E. Álvarez, June 2009, *L. Thoerle 133* (MO); Guasca, alt. 3000 m, June 2007, collected and flowered in cultivation by L. E. Álvarez, June 2009, *L. Thoerle 134* (MO).

**Nariño:** La Cocha, 3000 m, 5 Mar. 1989, *C. Luer & R. Escobar 14101* (MO); same area, alt. 2500 m, collected by E. Valencia, March 1992, flowered in cultivation at Colomborquídeas, 3 Jan. 1993, *R. Escobar 5220* (MO).

Also Peru (Cuzco, Holotype, *Macbride 4273*: F-535355; Huanuco), Ecuador (Carchi, Azuay, Sucumbíos, Zamora-Chinchipe), Bolivia (Cochabamba).

This large, robust species is widely distributed in moist forests at altitudes around 3000 meters above sea level from southern Colombia into Bolivia. It is identified by tall, stout ramicauls clad in essentially glabrous, nondilated lepanthiform sheaths; elliptical-ovate acuminate leaves; short inflorescences laxly flowered below, becoming congested above; smooth-margined, broad but acuminate sepals; glabrous, bilobed petals with a constriction near the middle; and a lip with elliptical blades ciliate at the apex and a minute, biglandular appendix.

*Lepanthes caudatisepala* is similar to *L. profusa* Luer & Hirtz, but they are sufficiently different to retain as separate species. The pedicels of *L. caudatisepala* are about twice the length of the subtending bracts, while those of *L. profusa* are approximately the same length as the bracts. The flowers of *L. caudatisepala* have smooth-margined sepals and a lip with flat blades, while those of *L. profusa* have denticulate sepals and a lip with the blades indented above the middle.

## **Lepanthes cerambyx** Luer & R. Escobar, Orquideología 18(1): 32-34, 1991.

Ety.: From the Greek *kerambyx*, "a horned beetle," referring to the imagined appearance of the flower on the leaf.

**Plant** small to medium in size, epiphytic to lithophytic, caespitose; roots slender. Ramicauls slender, erect, 3-10 cm long, enclosed by 6-10 close, glabrous lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly ovate, acute, acuminate, apiculate, 3-5 cm long, 0.5-0.9 cm wide, the base cuneate to an indistinct petiole 1 mm long, or without a petiole. **Inflorescence** a very congested, successively flowered raceme up to 10 mm long, borne on top of the leaf by a filiform peduncle 4-10 mm long; floral bracts imbricating, 1.5 mm long; pedicels 2-3 mm long; ovary 1.5 mm long; **sepals** yellow, lightly veined in purple, glabrous, margins smooth, ovate, obtuse, the dorsal sepal 3.5 mm long, 2.8 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 3.25 mm long, 2 mm wide, connate 0.75 mm, 2-veined; **petals** glabrous, orange, suffused with red medially, transversely bilobed, 1 mm long, 3.75 mm wide, the upper lobe erect in the natural position, oblong, obliquely truncate, with the angles lightly acuminate and rounded, the lower lobe narrowly oblong, obtuse; **lip** bilaminate, glabrous, at most microscopically pubescent, the blades purple, elliptical with rounded ends, 1.2 mm long, the connectives cuneate, from the anterior half of the blades, the body broad, connate to the column at the base, the sinus protruding with a small but broad, pubescent appendix with a bilobed apical segment; **column** comparatively large and thick, 2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Cocorná, Río Cocorná, alt. 1600 m, between Medellín and Bogotá, 21 Aug. 1984, *R. Escobar, C. Head & E. Valencia 3382* (Holotype: JAUM; Isotypes: COL, MO), C. Luer

illustr. 10467; Mun. Cocorná, alt. 2000 m, collected by E. Valencia, 1991, flowered in cultivation at Colomborquídeas, 3 Jan. 1993, *R. Escobar 5231* (MO).

This little species is recognized by the narrowly ovate leaves bearing on the dorsal surface a small, colorful flower with prominent, erect, obliquely truncate upper lobes of the petals, reminiscent of the horns of a beetle. The sepals are broad and obtuse, and the lobes of the lip are smaller than the column. The similar *Lepanthes dolabrata* Luer & R. Escobar is larger both vegetatively and florally, and the blades of the lip, with ciliate apices, are longer than the column.

**Lepanthes cercion** Luer & R. Escobar, Orquideología 17(3): 158-161, 1988.

Ety.: From the Greek *kerkion*, "a little tail," referring to the small, external appendix at the base of the body.

**Plant** small to medium in size, epiphytic, caespitose; roots filamentous. Ramicauls slender, erect, 2-7 cm long, enclosed by 3-8 slender, dark lepanthiform sheaths with microscopically ciliate margins. **Leaf** erect, coriaceous, elliptical, convex, obtuse to subacute, 2.5-3.5 cm long, 1.2-2.3 cm wide unexpanded, the rounded base abruptly contracted into a petiole 2-3 mm long. **Inflorescence** a very congested, distichous, successively flowered raceme up to 15 mm long, having borne up to 40 or more flowers, the peduncle filiform, 8-20 mm long, behind the leaf on the concave side; floral bracts 1 mm long, scabrous; pedicels 1-2 mm long; ovary 1-1.5 mm long; **sepals** light yellow, glabrous, ovate-triangular, acute, subcarinate, margins smooth, the dorsal sepal 3 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, 3 mm long, 1.5 mm wide, 2-veined, connate 1.2 mm; **petals** transversely bilobed, 0.8 mm long, 2.5-3.5 mm wide, the upper lobe orange, oblong, with the end rounded, the lower lobe yellow, smaller, oblong, narrowly obtuse; **lip** orange, bilaminate, the blades microscopically pubescent, ovate, weakly developed, barely more than incurved margins of the connectives surrounding the column, 1 mm long, the apices narrowly obtuse, curved beneath the column, the connectives narrow, with the body connate to the base of the column, the appendix small, ciliate, at the base of the body externally; **column** purple, proportionally large, 1 mm long, the anther and stigma apical.

**Antioquia:** epiphytic in forest east of Santo Domingo, alt. 1920 m, 12 May 1985, *C. Luer, R. Escobar & E. Valencia 11355* (Holotype: MO, non SEL as in Luer & R. Escobar 1988); epiphytic in cloud forest above Frontino, alt. 1900 m, 5 May 1983, *C. Luer, J. Luer, R. Escobar, A. Pridgeon & E. Valencia 9034* (SEL).

**Chocó:** Mun. Carmen de Atrato, road to Guaduas, alt. 2000 m, collected by E. Valencia, 1991, flowered in cultivation at Colomborquídeas, 3 Jan. 1993, *R. Escobar 5242* (MO).

Also Venezuela (Falcón, Aragua, Sucre, Mérida, Bolívar).

The very congested raceme of this species is borne on the concave side of a convex leaf. The small blades of the lip may or may not meet over the proportionally large column that protrudes from between, and the appendix is a tiny organ on the external surface of the body.

This species has been found on both the Western and Central cordilleras of Colombia and it also occurs in Venezuela. Dunsterville's illustration of this species in Venezuelan Orchids Illustrated has been identified as the Guatemalan *Lepanthes samacensis* Ames.

**Lepanthes chelonion** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(1): 54-56, 1985.

Ety.: From the Greek *chelonion*, "a turtle shell," in allusion to the shape of the sepaline cup.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-15 mm long, enclosed by 3-4 close, microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous with both surfaces convex, elliptical, obtuse, 9-12 mm long, 6-8 mm wide, the cuneate base contracted into a petiole 1 mm long. **Inflorescence** a loose, lightly flexuous, successively few-flowered raceme 1.5-4 cm long including the filiform peduncle; floral bracts echinate, 1.5-2 mm long; pedicels 2.5-3.5 mm long;

ovary 1.5-2 mm long; **sepals** diffusely suffused with red-purple, lighter along the margins, carinate, shortly pubescent within, margins smooth, the dorsal sepal ovate, 17 mm long, concave basally, 10 mm wide expanded, 3-veined, connate to the lateral sepals for 5 mm to form a bowl-shaped sepaline cup, the apex erect, acute, acuminate, the lateral sepals ovate-triangular, connate 8 mm, concave basally, 16-18 mm long, 12 mm wide together expanded, apices approximate, each 2-veined; **petals** red, pubescent, transversely bilobed, linear-oblong, 0.75 mm long, 6 mm wide, the lobes narrowly triangular, acute, the lower lobe longer; **lip** red with yellow-white apices, the blades narrowly oblong-ovate, long-ciliate, 2.5 mm long, acute at the slender apices, round at the bases, the connectives short, cuneate, the body narrow, connate to the column above the base, the appendix narrowly ligulate, ciliate externally at the base; **column** 1.25 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** Cerro Pelado, epiphytic in subpáramo cloud forest, alt. 2600 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10215* (Holotype: MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 26 Aug. 1984, *R. Escobar 3401* (COL, JAUM); epiphytic in cloud forest below Páramo de Jurisdicciones, between Ocaña and Pamplona, alt. 2600 m, 10 Nov. 1981, *C. Luer, J. Luer, R. Escobar & D. Portillo 6626* (SEL).

**Santander:** Virolín, collected with *Lepanthes nautilus* Luer & R. Escobar by E. Valencia, June 1994, flowered in cultivation at Colomborquídeas, 23 May 1995,*C. Luer 17598* (MO).

One plant of this unusual tiny but large-flowered species was discovered in a remote cloud forest of the Eastern Cordillera in 1981. The flower was preserved in fixative solution, but the little plant failed to survive in cultivation. In 1982, another plant was sought, but in vain. In 1984, Luer and his companions discovered a second plant, and again no other plant could be found. That plant thrived and flowered in cultivation at Colomborquídeas, and found its way into many collections. In the last decade, there have been numerous collections of this species from the area of Páramo de Jurisdicciones. The bowl-shaped sepaline cup is reminiscent of that of *Lepanthes nautilus* Luer & R. Escobar, but the much smaller size of the plant, and the slender, ciliate petals and lip readily distinguish this species.

**Lepanthes chimaera** Luer & R. Escobar, Orquideología 16(2): 130, 1984.

Ety.: Named for the chimaera, the mythological, fire-breathing monster.

**Plant** large, robust, epiphytic, caespitose, often prolific; roots coarse. Ramicauls erect, stout, occasionally proliferating other ramicauls, 20-58 cm long, enclosed by 8-15 close, microscopically scabrous lepanthiform sheaths with oblique apices. **Leaf** erect, coriaceous, elliptical, acute, acuminate, 11-14 cm long, 3.5-6 cm wide, the base broadly cuneate into a petiole ca. 1 cm long. **Inflorescence** a subcongested, successively many-flowered raceme to 5 cm long, borne by a slender peduncle 3-6 cm long, 2-3 flowers open simultaneously; floral bracts 5 mm long; pedicels 2 mm long; ovary 4 mm long, narrowly winged; **sepals** yellow or rose, tall-carinate, long-caudate, margins ciliate-denticulate, the dorsal sepal glabrous, triangular, concave, acute, 20 mm long, 5 mm wide, 3-veined, connate to the lateral sepals for 2 mm to form a concave cup, the lateral sepals pubescent within, ovate, oblique, deeply concave basally, acute, 19 mm long, 5 mm wide, connate 5 mm, 2-veined; **petals** orange with red margin, minutely pubescent, transversely elliptical, bilobed, 1.5 mm long, 2.25 mm wide, the lobes broadly ovate, rounded on the ends, upper lobe much larger than lower; **lip** orange with or without red margin, bilaminate, the blades elliptical-ovate, 2 mm long, minutely ciliate, the ends rounded, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse with a minute, capitate appendix; column 2 mm long, the anther dorsal, the stigma ventral.

**Nariño:** epiphytic in cloud forest near La Victoria, alt. 3200 m, 4 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4633* (Holotype: SEL).

**Putumayo:** Santiago, San Antonio de Bellavista, Páramo del Bordoncillo, alt. 3240 m, 16 Apr. 1999, *S. M. Pasmiño & M. R. Posso 50* (MO).

Also Ecuador (Carchi).

This large, grotesque species is found at high altitudes on both sides of the border between Colombia and Ecuador. The large, long-tailed flowers are produced in a raceme borne behind the leaf and do not expand fully. The sepals are tall-carinate

and inflated toward their bases. The petals are proportionally very small, and the oblong blades of the lip are not remarkable.

**Lepanthes chocoënsis** Luer & Thoerle, Harvard Pap. Bot. 16(2): 326, 2011.

Ety.: Named for the department of Chocó in the Western Cordillera of Colombia where the species was collected.

**Plant** small, epiphytic, caespitose, roots filamentous. Ramicauls very slender, erect, 4-4.5 cm long, enclosed by 6-7 glabrous lepanthiform sheaths. **Leaf** erect, thinly coriaceous, suffused with purple, acute, acuminate to a mucronate tip, 25-30 mm long, 8 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, successively flowered raceme up to 5 mm long, borne by a slender peduncle ca. 8 mm long in front of the leaf; floral bracts 1 mm long, minutely muricate; pedicels 1.5 mm long; ovary 1 mm long; **sepals** reddish ("rojizo oscuro"), glabrous, margins shortly ciliate, the dorsal sepal 3.5 mm long, 3 mm wide, 3-veined, ovate, obtuse, shortly acuminate into a cauda ca. 0.5 mm long, the lateral sepals diverging widely, 4 mm long, 2 mm wide, 2-veined, ovate, acute, oblique, acuminate into caudae ca. 1 mm long, connate ca. 0.5 mm; **petals** transversely bilobed, minutely pubescent, 0.75 mm long, 2.5 mm wide, the upper lobe oblong, truncate with rounded corners, 1.25 mm long, 0.75 mm wide, the lower lobe smaller, oblong-triangular with rounded apex, 0.75 mm long; **lip** bilaminate, microscopically ciliate-pubescent, the blades elliptical, with the bases rounded and with the apices narrowly incurved, 1.5 mm long, the connectives cuneate, the body connate to the column above the base, the sinus retuse with a recurved, oblong appendix; **column** terete, 1.5 mm long, the anther apical, the stigma ventral.

**Chocó:** Munic. San José del Palmar, Cerro del Torrá, above the heliport, cloud forest, alt. ca. 1920 m, 8 Jan. 1984, *P. Silverstone-Sopkin, N. Paz, A. Duque & H. Bayona 1636* (Holotype: MO; Isotype: CUVC), C. Luer illustr. 21520.

This species from the Western Cordillera of Colombia is characterized by a small, weak plant with very thin ramicauls; an ovate leaf acuminate to a mucronate tip; a short, congested raceme bearing flowers with sepals with ciliate margins and caudate apices; a lip with elliptical blades; and a reflexed appendix. The small plant with small flowers with widely spreading, denticulate sepals superficially resembles *Lepanthes hirsutula* Luer & Hirtz, but the latter is distinguished by narrowly oblong, long-ciliate petals; and a lip with pubescent blades and a large, pubescent protuberance in place of a sinus.

**Lepanthes cincinnata** Luer & R. Escobar, Orquideología 19(1): 35-36, 1993.

Ety.: From the Latin *cincinnatus*, "with a curled ringlet," referring to the tips of all three sepals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 9-12 cm long, enclosed by 14-15 lepanthiform sheaths with dilated, ciliated ostia. **Leaf** suffused with purple, glabrous or minutely pubescent, sulcate, spreading, coriaceous, ovate, acute, 4.5-5 cm long, 1.8-2 cm wide, the base rounded, contracted into a petiole 2 mm long. **Inflorescence** a congested, secund, successively many-flowered raceme, up to 20 or more mm long, borne on top of the leaf by a slender peduncle 10-12 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 2.5 mm long; **sepals** purple-brown, glabrous, flat, margins denticulate, the dorsal sepal ovate, 8 mm long including the cauda 2 mm long, 5 mm wide, 3-veined, the apex subacute to obtuse, acuminate into a slender, incurved cauda, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, acute, 7 mm long, 2-veined, connate 2 mm into an ovate synsepal 5.5 mm wide, with the acute, acuminate apices in apposition with the caudae crossing; **petals** light yellow-green, minutely pubescent, transversely bilobed, 1.5 mm long, 5.5 mm wide, the lobes similar, subfalcate, with the obtuse apices medial, the upper lobe broader than the lower lobe; **lip** light yellow-green, bilaminate, 2.5 mm long, the blades narrowly oblong, microscopically pubescent, with the apices rounded and long-ciliate, the connectives short, cuneate, the body narrow, connate to the base of the column, the appendix short, tridentate; **column** 1.5 mm long, with the anther dorsal and the stigma ventral.

**Valle del Cauca:** Balkanes, collected by E. Valencia, July 1989, flowered in cultivation at Colombórquídeas, 27 Dec. 1992, *R. Escobar 5081* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16571.

**Risaralda:** Pueblo Rico, road to Ciatocitom, alt. 2200 m, collected by E. Valencia, June 1991, flowered in cultivation at Colomborquídeas, 21 Dec. 1992, *R. Escobar 5063* (JAUM, MO).

This species is similar to the relatively frequent and widely distributed *Lepanthes manabina* Dodson, both bearing dull colored, greenish flowers in the deep sulcus of dark green leaves. The sepals of *L. cincinnata* are flat rather than concave. The blades of the lip are round at the apex and long-ciliate, and the appendix is tridentate rather than a small triangle. *Lepanthes cincinnata* is known from two widely separated collections in Colombia, which differ vegetatively. The leaves of the collection from Valle del Cauca are essentially flat and glabrous, while the leaves of the collection from Risaralda are concave and sulcate, and shortly pubescent. The flowers are identical except that the tridentate appendix of the latter is shorter than that of the former.

**Lepanthes cingens** Luer & R. Escobar, Orquideología 19(2): 87-88, 1994.

Ety.: From the Latin *cingens*, "surrounding," referring to the convex blades of the lip that envelop the column and appendix.

**Plant** large, epiphytic, caespitose; roots numerous, filiform. Ramicauls slender, erect, 9-21 cm long, enclosed by 13-16 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, acuminate, 7-10 cm long, 2.5-3.5 cm wide, the rounded base contracted into a petiole 3-4 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 20 mm long, borne behind the leaf by a filiform peduncle 20-30 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 1.5 mm long; **sepals** light green, glabrous, low-carinate, margins smooth, the dorsal sepal triangular, acute, 6 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, the lateral sepals ovate, oblique, diverging, subacute, 6 mm long, 2 mm wide, 2-veined, connate 2 mm; **petals** orange with the edge red, microscopically pubescent, transversely bilobed, the upper lobe oblong-ovate, obtuse, 3 mm long, 1.5 mm wide, the lower lobe 1.5 mm wide at the junction with the upper lobe, abruptly contracted into a narrowly oblong lobe 1.5 mm long, 0.5 mm wide; **lip** bright purple, bilaminate, the blades glabrous, ovoid, deeply convex, subacute at the apex, round at the base, 1.5 mm long, enclosing the column, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse, filled with a cymbiform, incurved appendix; **column** 1.5 mm long, with the anther dorsal and the stigma ventral.

**Risaralda:** above Pueblo Rico, epiphytic in cloud forest, Alto de Linea, alt. 2100 m, 11 May 1993, *C. Luer, J. Luer, R. Escobar & J. Gómez 16783* (Holotype: MO); La Linea, alt. 2100 m, collected May 1993, R. Escobar 5490, flowered in cultivation at Colomborquídeas, 3 June 1995, *C. Luer 17720* (MO); road to TV tower south of Pueblo Rico, alt. 2400 m, collected May, 1993, R. Escobar s.n., flowered in cultivation at Colomborquídeas, 3 June 1995, *C. Luer 17724* (MO).

**Antioquia:** Frontino, alt. 1950 m, 6 March 1994, *R. Escobar et al. 5487* (JAUM).

**Chocó:** El Carmen, Carmen del Atrato, alt. 2400 m, 3 June 1995, flowered in cultivation at Colomborquídeas, 3 June 1995, R. Escobar 5347, *C. Luer 17722* (MO).

This large species, known from several areas in the Western Cordillera, is superficially similar to *Lepanthes elata* Rchb. f. and its many relatives. The sepals and petals are not particularly distinctive, but the lip is unusual with the ovoid blades deeply convex and enclosing the column as the shell of a bivalved mollusk. The boat-shaped appendix beneath the stigma is included within the confines of the blades of the lip.

**Lepanthes clausa** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(6): 728, 1985.

Ety.: From the Latin *clausus*, "closed," referring to the flowers that seldom open.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicaul slender, erect, 10-25 mm long, enclosed by 3-4 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 12-18 mm long, 4-7 mm wide, cuneate at the base into an indistinct petiole 1 mm long. **Inflorescence** a loose, few-flowered raceme up to 35 mm long including the filiform peduncle 15-20 mm long; floral bracts 2

mm long; pedicels 1.5 mm long; ovary 1 mm long but soon enlarging to 4 mm; the flowers red, often producing a capsule, **sepals** usually closed, occasionally partially or mostly parting, glabrous, ovate, acute, lightly acuminate, margins essentially smooth, the dorsal sepal 4 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, the lateral sepals oblique, diverging, 4.5 mm long, connate 2.5 mm, 3 mm wide together, each 2-veined; **petals** orange, suffused with red medially, glabrous, transversely bilobed, 0.5 mm long, 3 mm wide, the upper lobe oblong with the end rounded, the lower lobe smaller, narrowly triangular, acute; **lip** yellow, glabrous, the blades narrowly ovate with rounded ends, 1.5 mm long, the connectives short, from the blades near the base, the body concave, connate to the column above the middle, the appendix oblong, thick, ciliate externally, with a sessile, orbicular apical segment; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** Villacaro, near Alto de San Francisco above Villacaro, alt. 2850 m, 11 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10274* (Holotype: MO; Isotype: JAUM); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 9 July 1984, *R. Escobar 3288* (COL, JAUM).

**Cundinamarca:** above Chia, alt. 2650 m, 15 May 2007, flowered in cultivation, June 2009, by Arturo Carrillo 147-B, *L. Thoerle 101* (MO).

Numerous plants of this little species have been observed in the wild, but nearly all bore buds and capsules in various stages of maturation. Open flowers are rarely seen. Most unusual is the lip with very short connectives supporting the blades at the base, but with the body connate to the column above the middle. The round lobule of the apex of the appendix lies in contact with the stigma with the tips of the pollinia immediately above. The smaller plant of the cleistogamous *Lepanthes cucullata* Luer & R. Escobar bears flowers with sepals about half the length, with the dorsal sepal deeply concave.

**Lepanthes climax** Luer & R. Escobar, Orquideología 17(3): 162, 1988.

Ety.: From the Greek *klimax*, "a staircase," referring to the climbing, superposed habit.

**Plant** large, epiphytic, climbing, prolific; roots slender. Ramicauls slender to stout, often superposed, 8-20 cm long, enclosed by 7-9 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, acuminate, 5.5-10 cm long, 2-3.8 cm wide, the base cuneate into a petiole 5-10 mm long. **Inflorescence** a loose, flexuous, successively flowered raceme up to 5 cm long, borne by a slender peduncle 4-5 cm long; floral bracts 3 mm long; pedicels 2 mm long; ovary ribbed, 2 mm long; **sepals** rose, glabrous, triangular-ovate, acute, acuminate, carinate, margins minutely ciliate, the dorsal sepal 12 mm long, 5.5 mm wide, 3-veined, connate to the lateral sepals for nearly 2 mm, the lateral sepals oblique, diverging, 12.5 mm long, connate 6 mm, 7.5 mm wide together, each 2-veined; **petals** rose, minutely pubescent, transversely bilobed, 2 mm long, 5 mm wide, with a minute apiculum on the outer margin between the lobes, the upper lobe oblong with the end rounded, the lower lobe much smaller, triangular, obtuse; **lip** rose, bilaminate, the blades pubescent, narrowly oblong, with the ends acute, the bases recurved, 2 mm long, the connectives narrowly oblong, connate to the base of the column, the sinus acute with a minute, pedunculate, ciliate appendix; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Santander:** epiphytic in cloud forest between Santa Barbara and Guaca, alt. 2850 m, 14 May 1982, *C. Luer & R. Escobar 7870* (Holotype: SEL).

*Lepanthes climax* is a robust, climbing species. It is easily distinguished from the other superposed species of the genus by the stout ramicauls, large flowers with very small lower lobes of the petals, and a lip with pointed blades and a pedunculated appendix. It is most similar to *L. superposita* Schltr., sharing a robust plant with a prolific habit and relatively large, flat flowers, but the petals of *L. superposita* have oblong lobes subequal in size and shape.

**Lepanthes cocculifera** Luer & R. Escobar, Orquideología 16(2): 133, 1984.

Ety.: From the Latin *coccus,* "a spherical bacterium," hence *cocculifer*, "bearing minute cocci," referring to the tiny lobules at the apex of the appendix.

**Plant** medium in size, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 4-9 cm long, enclosed by 5-10 coarsely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, acuminate, apiculate, 4-6.5 cm long including the 3 mm long petiole, 1.5-2.2 cm wide, the rounded base contracted into the petiole. **Inflorescence** a congested, distichous, successively flowered raceme up to 20 mm long, borne behind the leaf by a filiform peduncle up to 20 mm long; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 1.5 mm long; **sepals** light yellow, glabrous, ovate, acute, margins smooth, the dorsal sepal 5 mm long, 3.25 mm wide, 3-veined, connate 1 mm to the lateral sepals, the lateral sepals diverging, connate 2 mm, 5.5 mm long, 4.5 mm wide together, each 2-veined; **petals** yellow, suffused with purple toward the base, microscopically pubescent, transversely bilobed, 1 mm long, 3 mm wide, the upper lobe obliquely falcate, acuminate, the lower lobe much smaller, 0.5 mm long, broadly triangular, obtuse; **lip** deep orange-brown, microscopically pubescent, the blades narrowly ovate with obtuse ends, 2 mm long, the apices ciliate, the connectives cuneate, connate to the base of the column, the appendix small, transverse, with a pair of minute apical lobules; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Santander:** epiphytic in cloud forest between Santa Barbara and Guaca, alt. 2850 m, 14 May 1982, *C. Luer & R. Escobar 7866* (Holotype: SEL).

This species is known only from its original collection in the Eastern Cordillera of Colombia. *Lepanthes cocculifera* is distinguished by the relatively robust ramicauls with coarsely ciliate sheaths, bearing an ovate, apiculate leaf. A short, congested raceme produces successive flowers with ovate sepals; petals with a greatly reduced lower lobe and a much longer, incurved, falcate upper lobe; and a lip with an appendix with a minute pair of terminal lobules.

**Lepanthes cogolloi** Luer & R. Escobar, Orquideología 18(1): 34-36, 1991.

Ety.: Named in honor of Dr. Alvaro Cogollo, curator of the herbarium JAUM in Medellín, Colombia, who discovered this species.

**Plant** small, epiphytic, caespitose; roots fine. Ramicauls erect, slender, 2-4 cm long, enclosed by 7-8 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-ovate, acute, lightly acuminate, 2-3.5 cm long, 1.5 cm wide, the base cuneate into a petiole 3 mm long. **Inflorescence** a congested, successively several-flowered raceme up to at least 5 mm long, borne along the back surface of the leaf by a slender peduncle 18-20 mm long; floral bracts echinate, 1.5 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** yellow, glabrous, carinate, margins smooth, the dorsal sepal broadly ovate, subacute or obtuse, 2.75 mm long, 2.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, acute, 5 mm long, 1.5 mm wide, connate 1 mm, 2-veined; **petals** proportionally large, yellow, minutely pubescent, transversely bilobed, 1.25 mm long, 3.25 mm wide, 1-veined, the upper lobe elliptical-oblong with the apex rounded, the lower lobe shorter, narrowly triangular; **lip** purple, minutely pubescent, bilaminate, the blades narrowly elliptical, concave, with the apices and bases narrowly obtuse, 1.2 mm long, the connectives cuneate, the body broad, connate to the base of the column, the sinus thickened with an oblong, pubescent appendix; **column** stout, 1 mm long, the anther apical, the stigma subapical.

**Antioquia:** Parque Nacional Natural "Las Orquídeas," Sector Venados, Río Venados, alt. 1090-1215 m, 28 July 1988, *A. Cogollo, J. Ramírez & O. Alvarez 3539* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 14408; collection data unknown, collected by M. Zapata, August 1988, flowered in cultivation at Colomborquídeas, 5-9 May 1993, *C. Luer 16727*(MO).

This species is characterized by elliptical, shortly acuminate leaves and a congested raceme borne along the back of the leaf; small, broadly ovate sepals; proportionally large, bilobed petals, the two upper lobes obscuring the dorsal sepal; and the lip with narrow, concave blades and a short, thick, pubescent appendix. Superficially, *Lepanthes cogolloi* resembles *L. perdita* Luer & Hirtz, both having proportionally large petals with rounded, overlapping upper lobes that

nearly hide the dorsal sepal, but the flower of the former is nearly twice as large while the plant is but half the height.

**Lepanthes conchyliata** Luer, Selbyana, 30(1): 6, 2009.

Ety.: From the Latin *conchiliatus*, "of a purple color," referring to the color of the flower.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4 cm long, enclosed by 6-7 glabrous, long-acuminate lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly elliptical, acute, 4 cm long, 0.9 cm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a lax, successively several-flowered raceme, 2-3 cm long including the peduncle ca. 0.8 cm long, borne in the sulcus of the leaf; floral bracts oblique, acute, 1-1.5 mm long; pedicels 1-1.5 mm long; ovary 2 mm long; **sepals** purple, glabrous, ovate, shortly acuminate, margins smooth, the dorsal sepal 4.5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 4 mm long, 2.25 mm wide, 2-veined, connate 2 mm; **petals** purple, transversely bilobed, 1.5 mm long, 4.5 mm wide, 1-veined, the lobes triangular, slightly oblique, convex, cellular, the tips of the upper lobes overlapping, the upper lobe 2.5 mm long, the lower lobe 2 mm long; **lip** purple, bilaminate, the blades cellular or microscopically pubescent, elliptical, convex, 2 mm long, surrounding the column, with cuneate connectives and a thick body connate to the base of the column, the sinus narrow with an oblong, long-ciliate appendix; **column** semiterete, 2 mm long, with the anther apical and the stigma ventral.

**Colombia:** without collection data, flowered in cultivation by Ecuagenera, Gualaceo, Ecuador, 5 Mar. 2001, *C. Luer 19658* (Holotype: MO).

This species is known only from the original collection made somewhere in Colombia, most likely in one of the southernmost departments. It is characterized by a small, narrowly elliptical leaf; and a lax, somewhat shorter raceme of about a dozen successive, purple flowers. The sepals are shortly acuminate, and the petals are proportionally large with the round tips of the upper lobes overlapping. The blades of the lip are convex and surround the column; the appendix is oblong and long-ciliate.

**Lepanthes confusa** Ames & C. Schweinf., Sched. Orch. 10: 40-41, 1930.

Ety.: From the Latin *confusus*, "confused," no doubt referring to some confusing aspect.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 7-25 mm long, enclosed by 2-6 ciliate lepanthiform sheaths. **Leaf** erect to spreading, coriaceous, suffused with purple beneath, elliptical, subacute to obtuse, lightly convex, 9-15 mm long, 4-11 mm wide, the rounded base contracted into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 3 mm long, borne beneath the leaf by a filiform peduncle 3-5 mm long; floral bracts 1 mm long, echinate; pedicels 1.5 mm long; ovary 0.75 mm long; **sepals** pale dull purple, glabrous, ovate, acute, margins denticulate, the dorsal sepal 3-3.75 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 3-3.5 mm long, 1.5-1.75 mm wide, 2-veined, connate 1-1.5 mm; **petals** transversely bilobed, 1 mm long, 3 mm wide, the lobes obliquely triangular with apices everted, acute, the upper lobe dark red-purple, conspicuously pubescent, the lower lobe orange, microscopically pubescent; **lip** red-purple with yellow margins, bilaminate, the blades ovate, with rounded ends, pubescent, 1 mm long, the connectives broadly cuneate, thick, the body broad, connate to the base of the column, the sinus obtuse with the appendix thick, oblong, obtuse, incurved, long-ciliate beneath; **column** stout, 1 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Dabeiba, collected by H. Angarita, 1989, flowered in cultivation by F. J. Salozar in Medellín, 27 Dec. 1992, *R. Escobar 5084* (MO).

**Valle del Cauca:** Bajo Calima, Concesión Pulpapel/Buenaventura, alt. 100 m, 19 Oct. 1987, *M. Monsalve B. 2001* (MO).

Also Costa Rica (Limón, Holotype, *Standley 48709*: AMES; Alajuela; San José; Cartago), Ecuador (Esmeraldas), Panama (Chiriquí).

This little species is widely distributed in relatively low altitude forests from Costa Rica, the source of the type specimen, through Panama and Colombia into

northwestern Ecuador. It is one of the very few species that range from Central America well into the Andes. The very small, elliptical, lightly convex leaves bear a proportionally large, colorful flower on the purple underside of the blade. The sepals are usually denticulate. The lobes of the petals are obliquely triangular and pubescent. The blades of the lip are long-pubescent, and the appendix is thick and incurved with either an entire or minutely bifid tip.

*Lepanthes confusa* is similar to *L. sericinitens*, also known from Antioquia, with a larger plant and a smaller flower. *Lepanthes sericinitens* is also distinguished from the former by flowers with nearly glabrous petals, and a lip with an external appendix originating from the surface of the body below the sinus.

**Lepanthes contingens** Luer, Phytologia 54(5): 335, 1983.

Ety.: From the Latin *contingens*, "in contact with," in reference to the process from the stigma in contact with the apical gland of the appendix.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect to suberect, 5-11 cm long, enclosed by 9-11 ciliate lepanthiform sheaths with broadly dilated ostia. **Leaf** erect to suberect, coriaceous, variable in size and shape, from broadly ovate to narrowly elliptical, from 3.5 cm long, 2 cm wide, to 5.5 cm long, 1 cm wide, the apex obtuse to acute, the base cuneate or rounded, contracted into a petiole 2-3 mm long. **Inflorescence** a congested, successively flowered raceme up to 12 mm long, borne by a filiform peduncle up to 10 mm long in the sulcus of the leaf, which usually twists so that the inflorescence is beneath; floral bracts 2 mm long; pedicels 1.25 mm long; ovary 2 mm long; **sepals** yellow with purple stripes along the veins, glabrous, margins smooth, the dorsal sepal triangular, 5 mm long, 3.75 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the subacute apex shortly acuminate, the lateral sepals connate 2 mm into an ovate, acute synsepal, 5 mm long, 4 mm wide, the acuminate apices approximate, each 2-veined; **petals** yellow, suffused with red-brown, transversely oblong, 1.1 mm long, 4 mm wide, with a small, obtuse angle on the margin at the midvein, the upper lobe oblong, truncate, the lower lobe smaller, triangular, acute; **lip** red-brown, the blades narrowly oblong, thin, membranous, transparent, 2.2 mm long, acutely angled on the inner margin near the narrowly obtuse apex, the connectives oblong, erect, lifting the blades above the column, the body with a slender, basal claw connate to the base of the column, the appendix oblong, pubescent, terminated by a small gland which is in contact with a strap-shaped process from the cavity of the stigma; **column** slender, clavate, 2 mm long, the anther dorsal, the stigma ventral.

**Nariño:** epiphytic in cloud forest east of La Victoria, alt. 3200 m, 4 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4637* (SEL).

Also Ecuador (Loja, Holotype, *Luer et al. 7152*: SEL; Carchi; Sucumbíos; Pichincha; Napo; Tungurahua; Zamora-Chinchipe).

This species is frequent and widely distributed in forests on both sides of the Andes in Colombia and Ecuador. The leaves of immature plants are broadly elliptical and obtuse, but all shapes are seen between these and the narrowly ovate, acuminate forms of most mature plants. The lip of the delicate flowers is most distinctive. The narrow, translucent blades, angled on the inner margins below the apex, are held over the column by short connectives. The body is attached to the base of the long, slender column by a long, slender claw. The pubescent apical segment of the appendix is in contact with a tongue-like process that descends from the stigma. *Lepanthes contingens* is closely resembles *L. transparens* Luer, but the latter is distinguished by a lip with broader, entire, lunate blades.

**Lepanthes cordata** Luer & R. Escobar, Orquideología 17(3): 165-168, 1988.

Ety.: From the Latin *cordatus*, "cordate," referring to the heart-shaped leaves.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-35 mm long, enclosed by 4-5 shortly ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, purple beneath, broadly cordate, obtuse, shortly acuminate, 8-12 mm long, 8-12 mm wide, the base cordate to subcordate with a

petiole 1.5-2 mm long. **Inflorescence** a congested raceme, 2-3 mm long, borne behind the leaf in a fascicle by filiform peduncles 6-9 mm long; floral bracts 1 mm long, minutely spiculate; pedicels 1.5 mm long; ovary 2 mm long; **sepals** white, glabrous, ovate, acute, margins smooth, the dorsal sepal 2.5 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 2.5 mm long, 1.5 mm wide, 2-veined, connate 1 mm; **petals** white with a broad, purple border, the margins irregularly serrate, transversely bilobed, 1 mm long, 3.2 mm wide, the upper lobe ovate, acute, the lower lobe narrowly ovate, acute; **lip** purple, bilaminate, 1.75 mm long, the blades ovate, with minutely irregular margins, acute apically, subtruncate basally, the connectives short, the body connate to the column above the base, the sinus acute with an oblong, pubescent appendix; **column** slender, the anther dorsal, the stigma apical.

**Antioquia:** epiphytic in forest above the Miraflores Dam northeast of Santa Rosa, alt. 2050 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia 11371* (Holotype: MO); Pabón, epiphytic in forest remnant along the road to Santa Ana, alt. 2050 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17670* (MO).

Also Ecuador (Pichincha).

This pretty little species may be recognized by the dark purple, broadly cordate leaves with a fascicle of peduncles behind and nearly as long the leaf. The white, purple-bordered, serrate petals are as large as the white sepals. The apices of the ovate blades of the lip are acute. *Lepanthes forceps* Luer & R. Escobar also has a cordate leaf as broad as it is long, and petals that are wider than the length of a sepal, but it is distinguished by sepals that are proportionally narrower and petals with an obtuse upper lobe.

**Lepanthes cornualis** Luer & R. Escobar, Orquideología 18(1): 36, 1991.

Ety.: From the Latin *cornualis*, "with horns," referring to the appearance of the blades of the lip.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender to stout, erect, 10-35 cm long, enclosed by 8-16 glabrous to microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple beneath, narrowly elliptical, acute, 7-11 cm long, 1-1.7 cm wide, the base cuneate into a petiole 3-4 mm long. **Inflorescence** 1-3 loose, successively several-flowered racemes up to 8 cm long, borne behind the leaf by a slender peduncle ca. 1 cm long; floral bracts 2-3 mm long; pedicels 2-3 mm long; ovary 3 mm long, with 3 fringed wings; **sepals** rose, glabrous, carinate-strigose, margins minutely denticulate, the dorsal sepal concave, triangular, subacute, shortly acuminate, 8 mm long, 5.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals convex, ovate, oblique, obtuse, shortly acuminate, diverging, 7.5 mm long, connate 2 mm, 7.25 mm wide together, each 1-veined; **petals** dull yellow with purple edges, minutely pubescent, transversely bilobed, 1.5 mm long, 7.5 mm wide, the lobes narrowly triangular, obtuse, subequal in size; **lip** rose, bilaminate, the blades ciliate, narrowly obovate, with obtuse or rounded apices and attenuate, acute bases, more or less recurved, 4.5 mm long, the connectives obliquely cuneate, from the anterior half of the blades, the body narrow, connate to the column near the base, the appendix minute with a bilobed apex; **column** slender, 2 mm long, the anther dorsal, the stigma ventral.

**Putumayo:** epiphytic in scrub forest in the páramo between La Cocha and Sibundoy, alt. 3000 m, 26 Jan. 1987, *C. Luer, J. Luer, R. Escobar, C. Dodson & O. Benavides 12525* (Holotype: MO); Santiago, San Antonio de Bellavista, Páramo del Bordoncillo, alt. 3240 m, 19 Mar. 1999, *S. M. Pasmiño & M. R. Posso 32, 34* (MO).

**Valle del Cauca:** El Cerrito, between Tenerife and Páramo de Pan de Azúcar, dwarf forest below the páramo, alt. 3450 m, 2 Apr. 1993, *P. Silverstone-Sopkin, J. Giraldo & T. Otero 6541* (CUVC, MO).

Also Ecuador (Tungurahua).

This tall, slender species is recognized by the narrowly elliptical leaves, considerably shorter than the long ramicauls; loose racemes shorter than the leaves; fringed ovaries; broad, minutely denticulate sepals, the laterals one-veined; and narrow blades of the lip with attenuate, more or less recurved bases resembling horns. The blades of the lip of *Lepanthes aries* are similarly hornlike, but the latter is distinguished by a concave dorsal sepal; deeply connate, two-veined lateral sepals; and petals with a protruding upper lobe larger than the lower lobe.

**Lepanthes corrugata** Luer & Dalström, Monogr. Syst. Bot. Missouri Bot. Gard. 61(3): 63, 1996.

Ety.: From the Latin *corrugatus*, "corrugated," referring to the irregularly puckered leaf surface.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-18 cm long, enclosed by 20-22 microscopically scabrous lepanthiform sheaths with dilated ostia. **Leaf** suberect, pubescent, thinly coriaceous, purple reticulate-veined, ovate, acuminate, 8-9 cm long, 3.5-4.5 cm wide, broadly cuneate below into a petiole 2-3 mm long. **Inflorescence** an extremely congested raceme of successive flowers, up to 10 mm long, borne by a filiform peduncle 3-4 cm long along the back of the leaf; floral bracts acuminate, recurved, 2.5 mm long; pedicels 3-4 mm long; ovary 3 mm long; **sepals** reddish, glabrous, carinate, margins smooth, the dorsal sepal ovate, narrowly obtuse, apiculate, 6 mm long, 4.25 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, shortly acuminate, subacute, diverging, 6 mm long, 2.75 mm wide, connate 2 mm, 2-veined; **petals** olive green, microscopically pubescent, transversely bilobed, 1.5 mm long, 5.5 mm wide, with a marginal filament 0.6 mm long between the lobes, the lobes triangular, acute, the upper lobe slightly larger; **lip** olive green, bilaminate, the blades thin, glabrous, lunate, adherent medially over the column, 2.5 mm long, the connectives broadly cuneate, the body broad, membranous, slightly concave, protruding, connate to the column at the base, the appendix ciliate, triangular, acute, on the protruding margin of the body; **column** 2 mm long, with the anther dorsal, and the stigma ventral.

**Nariño:** Mun. Ipiales, Las Lajas, alt. ca. 2500 m, flowered in cultivation in Bogotá by A. J. Carrillo, Sep. 2011, *P. Ortiz 1414* (HPUJ).

Also Ecuador (Sucumbíos, Holotype, *Dalström et al. 2153*: MO; Esmeraldas).

Until its recent discovery in Nariño, *Lepanthes corrugata* was known only from two disjunct collections in northern Ecuador. This large species is similar to *L. cotyledon* Luer from farther south in Ecuador on the eastern slopes of the Andes. It is distinguished from the latter by longer, multisheathed ramicauls and larger, pubescent leaves that are similarly thin, corrugated and purple; sepals that are smooth rather than ciliate; and a lip with a body that is broad, protruding, and only slightly concave, connected to the base of the column. Both species share a congested, long-pedicellate raceme shorter than the leaf; petals with a thin, lateral process; and a lip with thin, transparent blades adherent over the column.

**Lepanthes cuatrecasasii** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 112: 109, 2007.

Ety.: Named in honor of the late Dr. José Cuatrecasas, distinguished Spanish botanist, who collected this species.

**Plant** medium in size; roots slender. Ramicauls stout, erect, 6-11 cm long, enclosed by 6-9 dark lepanthiform sheaths with microscopically echinate margins. **Leaf** erect, coriaceous, ovate, subacute, 2-3.5 cm long, 2-2.5 cm wide, the base cuneate into a petiole 5 mm long. **Inflorescence** a subcongested, successively several-flowered raceme up to 20 mm or more long, borne along the back of the leaf by a filiform peduncle up to 15 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** appear to have been either white or yellow, glabrous, carinate, margins smooth, the dorsal sepal broadly ovate, obtuse, 4.5 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, diverging, 5 mm long, 2.5 mm wide, 1-veined, connate 1.5 mm; **petals** glabrous, transversely bilobed, 0.5 long, 4 mm wide, with a small marginal angle between the lobes, the lobes oblong with rounded ends; **lip** glabrous, bilaminate, the blades oblong, 2.25 mm long, with rounded ends, the apex embracing the apex of the column, the connectives broadly cuneate, the body broad, connate to the column above the base, the sinus acute with a small, triangular appendix; **column** terete, 2 mm long, the anther apical, the stigma ventral.

**Valle del Cauca:** western slopes of the Central Cordillera, branch of the Río Bugalagrande, Cuchilla de Barragán, alt. 3250 m, 12 Apr. 1946, *J. Cuatrecasas 20601* (Holotype: AMES), C. Luer illustr. 19287.

This species is apparently endemic in the Central Cordillera of southern Colombia, where it was collected by Cuatrecasas. *Lepanthes cuatrecasasii* is

characterized by stout ramicauls with dark sheaths, and an ovate leaf with a shorter, subcongested raceme of successive flowers. No color notes are present. The floral parts are glabrous. The dorsal sepal is obtuse, while the laterals are acute, diverging, and one-veined. The lobes of the petals are oblong with a marginal angle between. The blades of the lip are oblong with the apices embracing the column. The appendix is minute and triangular.

**Lepanthes cucullata** Luer & R. Escobar, Orquideología 19(2): 89-90, 1994.

Ety.: From the Latin *cucullatus*, "cucullate," referring to the shape of the dorsal sepal.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-12 mm long, enclosed by 5-6 minutely ciliate lepanthiform sheaths. **Leaf** thickly coriaceous, broadly elliptical to subcircular, obtuse, 7-9 mm long, 6-8 mm wide, contracted below into a petiole 0.5 mm long. **Inflorescence** a loose, distichous, successively several-flowered raceme 15-22 mm long of purple, cleistogamous flowers, borne by a peduncle ca. 10 mm long; floral bracts echinate, 1 mm long; pedicels 1 mm long; ovary 0.5 mm long; **sepals** glabrous, carinate, margins minutely subdenticulate, the dorsal sepal broadly ovate, deeply concave, obtuse, very shortly acuminate, 1.8 mm long, 1.5 mm wide expanded, 3-veined, the lateral sepals concave, ovate-triangular, oblique, acute, free, apices approximate, 1.6 mm long, 0.8 mm wide, 1-veined; **petals** pubescent, transversely bilobed, 1.6 mm long, 0.4 mm wide, the lobes equal, oblong, with the ends rounded, the upper lobes folded over the column and lip in the natural position; **lip** bilaminate, the blades elliptical-ovate, pubescent, 1.2 mm long, with the bases rounded and the apices incurved under the column, the connectives and body broadly oblong, connate to the base of the column, the sinus obtuse with a bilobed appendix; **column** semiterete, 1 mm long, with the anther and the stigma apical.

**Norte de Santander:** epiphytic in cloud forest near Alto de San Francisco, alt. 2850 m, 11 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10282* (Holotype: MO).

This little species, found only once at the locality of *Masdevallia mastodon* Rchb. f. in the Eastern Cordillera, is one of the "ugly ducklings" of the genus. Vegetatively, it is similar to any little species of *Lepanthes* or *Trichosalpinx* Luer. It is distinguished by loose racemes that exceed the thick, subcircular leaves in length, bearing tiny, purple, cleistogamous flowers. The obtuse dorsal sepal is deeply concave, especially toward the apex. The lateral sepals are triangular, one-veined, acute, and free but not spreading. The upper lobes of the transversely oblong petals fold over the column and lip. The apices of the blades of the lip curve under the apex of the column. The body is broad, with a bilobed appendix in the obtuse sinus. The flowers of the similar *L. clausa* are also seldom seen open before they form capsules, but the sepals are twice as long.

**Lepanthes culex** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(7): 716, 1984.

Ety.: From the Latin *culex,* "a mosquito," referring to the minute, spindly flower.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 4-5.5 cm long, enclosed by 5-6 microscopically scabrous lepanthiform sheaths. Leaf erect, coriaceous, suffused with purple beneath, elliptical, 4-5.5 cm long, 1-1.5 cm wide, the apex lightly acuminate, acute, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a very congested, distichous, successively flowered raceme up to 4 mm long, borne behind the leaf by a filiform peduncle ca. 8 mm long; floral bracts minutely ciliate, 1.5 mm long; pedicels 1.5 mm long; ovary 1.75 mm long; **sepals** yellow, glabrous, ovate, acute, carinate, reflexed, the sides more or less revolute, margins smooth, the dorsal sepal 4.5 mm long, 2 mm wide, 3-veined, the lateral sepals diverging, 4.75 mm long, 2 mm wide, connate 1 mm, 2-veined; **petals** bright yellow, microscopically pubescent, transversely bilobed, 0.5 mm long, 7.5 mm wide, the lobes subequal, spreading, narrowly linear, acute, gently curved, the lower lobe with a minute lobule on the inner margin; **lip** white, suffused with red-purple, microscopically pubescent, cordate or V-shaped, 2.5 mm long, the rounded apex shortly incised, the margins thickened, the rounded basal lobes erect and surrounding the column, the base originating from the middle of the column; **column** slender, 2 mm long, the anther apical, the stigma subapical.

**Antioquia:** Mun. Yarumal, Ratón Pelado, alt. 2700 m, *R. Escobar & E. Valencia 2676* (SEL), C. Luer illustr. 9113; same collection, flowered in cultivation at Colomborquídeas, El Retiro, 5 Dec. 1983, *R. Escobar 3189* (Holotype: MO; Isotypes: JAUM, SEL), C. Luer illustr. 9494; Alto de Ventanas, alt. 2000 m, 14 Feb. 1984, *R. Escobar & E. Valencia 3233* (JAUM); Briceño, above Quebrada El Oro, alt. 1820 m, 14 Feb. 1984, *R. Escobar & E. Valencia 3230* (COL, JAUM, MO); epiphytic in cloud forest, Ratón Pelado, above Yarumal, alt. 2650 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10056* (MO); Mun. Yarumal, epiphytic in forest remnant along the road to El Cedro, alt. 1850 m, 15 March 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14176* (MO); epiphytic in forest remnant along the road to Briceño, Quebrada El Oro, alt. 1850 m, *C. Luer, J. Luer, S. Dalström & W. Teague 14190* (MO).

**Valle del Cauca:** without locality, alt. 1900 m, flowered in cultivation by Orquídeas del Valle, 12 March 1997, *C. Luer 18420* (MO).

**Colombia:** without collection data, flowered in cultivation at Colomborquídeas, 5-9 May 1993, *C. Luer 16726* (MO).

This species is one of a group characterized by a cordate lip with a round, cleft apex. It is similar to *Lepanthes alcicornis*, with which it grows sympatrically. Vegetatively, *L. culex* is larger than *L. alcicornis.* The petals of *L. culex* are two-pronged, while those of *L. alcicornis* are four-pronged.

**Lepanthes cuneiformis** Luer & R. Escobar, Orquideología 16(2): 135, 1984.

Ety.: From the Latin *cuneiformis*, "wedge-shaped," referring to the upper lobes of the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1.5-3.5 cm long, enclosed by 6-8 ciliate lepanthiform sheaths with widely dilated ostia. **Leaf** erect, coriaceous, suffused with purple beneath, ovate, abruptly acute, 13-23 mm long including the 2 mm long petiole, 10-14 mm wide, the rounded base contracted into the petiole. **Inflorescence** a congested, successive, several-flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle up to 7 mm long; floral bract and pedicel each 1.5 mm long; ovary 1 mm long; **sepals** translucent yellow, glabrous, margins smooth, the dorsal sepal ovate, subacute, suffused with purple at the apex, 4 mm long, 2.75 mm wide, 3-veined, connate to the lateral sepals for less than 1 mm, the lateral sepals connate 2.3 mm into a broadly ovate to subcircular synsepal, 3.5 mm long, 3.75 mm wide, the apex shortly bifid, the apices obtuse, each lateral sepal 1-veined; **petals** yellow with a purple inner margin, pubescent, transversely bilobed-oblong, 1.3 mm long, 3 mm wide, the upper lobe broadly cuneate, truncate, the lower lobe much smaller, oblong, truncate; **lip** purple, shortly pubescent, the blades narrowly elliptical, 2 mm long, acute at the apex, rounded at the base, the connectives broadly cuneate, the body connected to the column above the base, the sinus cleft, the appendix ligulate, pubescent, protruding from the under surface of the body; **column** 2.5 mm long, the anther and stigma apical.

**Norte de Santander:** Alto de Santa Inéz, alt. 2150 m, May 1982, *C. Luer, R. Escobar & D. Portillo 7943* (Holotype: SEL).

This pretty little species from Colombia's Eastern Cordillera is distinguished by the deeply connate, single-veined lateral sepals and the broadly cuneate, minutely pubescent petals overlapping above the lip. The sinus of the lip is deeply cleft; the appendix originates on the under surface of the body and protrudes forward, but still a long distance from the stigma.

Among the Colombian representatives of *Lepanthes* subsect. *Breves*, it is most similar to *Lepanthes hemirhoda* Garay. The plant of *L. hemirhoda* dwarfs that of *L. cuneiformis*, but the flower of the latter is larger. The lateral sepals of *L. cuneiformis* are deeply connate into a shortly bifid synsepal; the lateral sepals of *L. hemirhoda* are less deeply connate. The similarly obtuse upper lobe of the petals of *L. hemirhoda* is about three times as long as the lower lobe and about four times as broad, nearly obscuring the dorsal sepal, while the upper lobe of *L. cuneiformis* is only about 50 percent longer than the lower lobe.

**Lepanthes cunicularis** Luer & R. Escobar, Orquideología 20(3): 289-291, 1997.

Ety.: From the Latin *cunicularis*, "of rabbits," referring to the large upper lobes of the petals.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, bending with the weight of the leaf, 7-15 cm long, enclosed by 13-16 light green, long-pubescent lepanthiform sheaths with markedly dilated ostia. **Leaf** pendent when mature, coriaceous, broadly elliptical, obtuse, abruptly short-acuminate at the apex, 5-6 cm long, 3-4 cm wide, the base broadly cuneate, contracted into a petiole 3-4 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 15 mm long, borne on top of the leaf by a filiform peduncle 18-27 mm long; floral bracts spiculate, 1.5 mm long; pedicels 1 mm long; ovary 3-3.5 mm long; **sepals** yellow, glabrous, membranous, spiculate-carinate, widely spread, margins smooth, the dorsal sepal broadly ovate, obtuse, concave below the middle, 5.5 mm long, 5 mm wide, 5-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals broadly ovate, oblique, obtuse, diverging, 5 mm long, 3 mm wide, connate 2 mm, 2-veined; **petals** bright dark yellow, glabrous or cellular-pubescent, transversely bilobed, 0.75 mm long between lobes, the upper lobe obovate, rounded at the apex, 4 mm long, 2 mm wide, the lower lobe falcate, 1.75 mm long, 1 mm wide; **lip** yellow with purple margins, bilaminate, the blades microscopically pubescent, narrowly oblong, 1.5 mm long, with rounded ends, the connectives cuneate, the body connate to the base of the column, the sinus acute with the appendix minute, narrowly oblong; **column** 1.5 mm long, the anther and stigma apical.

**Risaralda:** San Antonio de Chamí, alt. ca. 1800 m, collected by E. Valencia, July 1994, flowered in cultivation at Colomborquídeas, 3 June 1995, *R. Escobar s.n.* (Holotype: MO), C. Luer illustr. 17709.

This species, known only from several plants from the department of Risaralda, is characterized by a comparatively heavy leaf, causing the ramicaul to bend. The sheaths of the ramicaul are long-ciliate with markedly dilated ostia. The leaf is broadly ovate with a shortly acuminate apex. The flowers are borne on top of the leaf in a congested raceme. The sepals are obtuse, with the dorsal five-veined. The large, obovate upper lobes of the petals, like a pair of rabbit ears, obscure much of the dorsal sepal; the falcate lower lobes are much smaller. The lip is unremarkable, with a small appendix in an acute sinus between cuneate connectives bearing narrow, obtuse blades. The much smaller *Lepanthes reticulata* Luer & R. Escobar shares the broadly ovate sepals and petals with large, rounded upper lobes, but with a narrowly triangular rather than falcate lower lobe.

**Lepanthes cyclochila** Luer & R. Escobar, Orquideología 19(2): 90-91, 1994.

Ety.: From the Greek *cyclocheilos*, "a circular lip," referring to the labellum.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 12-20 mm long, enclosed by 4-5 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, 15-19 mm long, 8-10 mm wide, with the base cuneate into a petiole 1 mm long. **Inflorescence** a dense, successively several-flowered raceme up to 7 mm long, borne behind the leaf by a peduncle 5-6 mm long; floral bracts 0.5 mm long; pedicels 1-1.25 mm long; ovary 0.4 mm long; **sepals** glabrous, carinate, margins smooth, the dorsal sepal oblong, obtuse, 2.2 mm long, 1.4 mm wide, 3-veined, connate to the lateral sepals for 0.3 mm, the lateral sepals elliptical, oblique, obtuse, diverging widely, 2.2 mm long, 1.5 mm wide, 2-veined, connate 0.5 mm; **petals** microscopically pubescent, transversely bilobed, 0.5 mm long, 2.5 mm wide, the upper lobe oblong, obliquely truncate, the lower lobe oblong, shallowly bifurcate into 2 oblong, narrowly rounded lobes; **lip** microscopically pubescent, without blades, subcircular with basal lobes embracing the column, 1.5 mm long, 1.6 mm wide, the apex rounded, retuse with an apiculum in the sinus, the base connate to the base of the column; **column** semiterete, 1 mm long, with the anther dorsal and the stigma apical.

**Antioquia:** Mun. Yarumal, "El Manicomio," alt. 2500 m, collected by S. Vieira, May 1989, flowered in cultivation at Colomborquídeas, 3 Jan. 1993, *R. Escobar 5241* (Holotype: JAUM; Isotype: MO).

**Colombia:** without collection data, flowered in cultivation at Colomborquídeas, *R. Escobar s.n.* (MO), C. Luer illustr. 15267.

This little species is similar to *Lepanthes petalopteryx* Luer & R. Escobar, sharing a small stature; proportionally large, angular petals; and a lip lacking blades. The smaller flowers of *Lepanthes cyclochila* are distinguished by smooth rather than denticulate sepals; petals with the lower lobe bifurcate rather than sub-quadrate; and a subcircular lip, deflexed so that the apex hangs below the column.

**Lepanthes cymbium** Luer & R. Escobar, Orquideología 19(2): 91, 1994.

Ety.: From the Latin *cymbium*, "a little bowl," referring to the cup-shaped flower.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 15-18 mm long, enclosed by 4-5 long-ciliate lepanthiform sheaths. **Leaf** erect, thickly coriaceous, elliptical, lens-shaped, acute, 11-13 mm long, 5-6 mm wide, cuneate below into a petiole 2 mm long. **Inflorescence** a subdense, distichous, successively many-flowered raceme up to 10 mm long, borne well beyond the leaf by a slender peduncle 15-25 mm long; floral bracts echinate, 1 mm long; pedicels 1.5 mm long; ovary 0.5 mm long; **sepals** yellow, carinate, concave, glabrous, margins minutely erose, the dorsal sepal transversely triangular, 9.5 mm long, 10 mm wide, 3-veined, connate to the lateral sepals for 5 mm to form a cup-shaped flower, the apex obtuse, contracted into a narrowly triangular apiculum, the lateral sepals connate 5 mm into a transversely triangular, bifid synsepal, 9.5 mm long, 12 mm wide, each 2-veined, the apices subacute, free for 3 mm, approximate; **petals** red medially, orange laterally, minutely pubescent, transversely bilobed, 0.75 mm long, 4.5 mm wide, the lobes nearly equally long, the upper lobe narrowly oblong, obtuse, the lower lobe narrowly triangular, the apex acute, long-ciliate; **lip** bilaminate, with the blades red toward the base, yellow-white toward the apex, glabrous, long-ciliate at the apices, narrowly oblong, 2 mm long, the connectives very short, cuneate, the body connate to the base of the column, the sinus broad with the appendix oblong, long-pubescent; **column** 1.25 mm long, the anther apical and the stigma ventral.

**Quindio:** below Alto La Linea, alt. 3200 m, 17 May 1989, flowered in cultivation at Colomborquídeas, Nov. 1990, *R. Escobar, E. Valencia, W. & H. Königer 4016* (Holotype: MO), C. Luer illustr. 14924.

**Nariño:** without exact location, collected by J. L. Aguirre, Aug. 2008, flowered in cultivation at Colomborquídeas, June 2009, *L. Thoerle 142* (MO), C. Luer illustr. 21467.

Also Ecuador (Pichincha).

This species is distinguished by the distichous raceme of relatively large, cup-shaped flowers borne above the little, lens-shaped leaves by a slender peduncle longer than the leaves. The central apparatus is held out from the back of the sepaline cup. The petals are slender and erect. The blades of the lip are also slender and long-ciliate at the apices. The appendix is oblong and pubescent. The shape of the broad sepaline bowl resembles that of *Lepanthes escobariana* Garay, but *L. escobariana* is readily distinguished by its larger flowers; the subtriangular, obtuse petals; and the lip with glabrous, elliptical blades.

**Lepanthes darioi** Luer & R. Escobar, Orquideología 20(3): 291-292, 1997.

Ety.: Named in honor of Dario Arbelaez, caretaker of the collection of *Lepanthes* at Colomborquídeas, El Retiro, Colombia.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-17 cm long, enclosed by 10-14 microscopically ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, elliptical, obtuse, abruptly contracted into a subulate apical portion 2-2.5 cm long, 5-9 cm long including the apical segment, 2.5-4 cm wide, the base rounded, contracted into a petiole 5-6 mm long. **Inflorescence** a congested, distichous, successively flowered raceme, up to 15 mm long, borne by a filiform peduncle 22-30 mm long; floral bracts oblique, 1.5 mm long; pedicels 1.5 mm long; ovary 3 mm long; **sepals** light yellow, carinate, glabrous, margins smooth, the dorsal sepal reflexed, ovate, acute, lightly acuminate, 6.5 mm long, 3-4 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, diverging, acute, lightly acuminate, connate 1.5 mm into a bifid synsepal, 6 mm long, 2.75 mm wide, each 2-veined; **petals** yellow with purple margins, white toward the base, microscopically cellular-pubescent, transversely bilobed, 1.5 mm long, 5.5 mm wide, the upper lobe oblong, obtuse, 4 mm long, 2 mm wide, the lower lobe triangular, 1.5 mm long; **lip** light rose, bilaminate,

microscopically pubescent, the blades 1.5 mm long, narrowly ovate at the anterior margins of erect, oblique, oblong connectives, each 1.5 mm long, the body broad, connate to the base of the column, with the anterior margin a broadly triangular appendix held directly below the stigma; **column** stout, 1.5 mm long, the anther dorsal and the stigma ventral.

**Antioquia:** cloud forest at the pass between Urrao and Carmen de Atrató, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Posada, et al. 17638* (Holotype: MO; Istoype: JAUM); same area, alt. 2400 m, collected by J. F. Posada, F. López & D. Arbelaez, Aug. 1993, flowered in cultivation at Colomborquídeas, Feb. 1994, *R. Escobar 5471* (MO), C. Luer illustr. 17157.

This species occurs at a cold, wet pass between the departments of Antioquia and Chocó. It is distinguished by the thin, more or less wrinkled leaf, with a long-acuminate apex from an obtuse blade. The medium-sized flowers are borne singly in a congested raceme beneath the leaf. The sepals are lightly acuminate, with the dorsal reflexed; the petals are transverse with the triangular lower lobe much smaller than the oblong upper lobe. From a host of other large Colombian species with mostly yellow flowers, it is most easily distinguished by the lip with narrow, blade-like margins of erect, oblique, oblong connectives.

**Lepanthes dasyura** Luer & R. Escobar, Orquideología 18(1): 40-42, 1991.

Ety.: From the Greek *dasyura*, "a hairy tail," referring to the appearance of the appendix.

**Plant** small, epiphytic, caespitose; roots fine. Ramicauls erect, relatively stout, 2-4 cm long, enclosed by 6-7 dark brown, ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, broadly elliptical-ovate, obtuse, lightly acuminate, 20-33 mm long, 14-23 mm wide, the base cuneate into a petiole 3 mm long. **Inflorescence** a congested, successively several-flowered raceme up to at least 5 mm long, borne along the back surface of the leaf by a slender peduncle 12-15 mm long; floral bracts echinate, 1.5 mm long; pedicels 2 mm long; ovary 1.2 mm long; **sepals** yellow, glabrous, carinate, ovate, obtuse, margins smooth, the dorsal sepal 3 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 2.75 mm long, 1.75 mm wide, connate 1.5 mm, 2-veined; **petals** green, glabrous to cellular-glandular, transversely bilobed, 1 mm long, 4.5 mm wide, 1-veined, the upper lobe suboblong with the apex oblique, truncate, acute, obtusely angled on the inner margin, the lower lobe diverging, obliquely ovate, subacute; **lip** purple, minutely pubescent, bilaminate, the blades narrowly ovate, lightly concave, with the apices narrow and incurved, the bases narrowly rounded, 1.2 mm long, the connectives cuneate, the body broad, connate to the base of the column, the sinus obtuse with a hinged, oblong, long-pubescent appendix; **column** stout, 1 mm long, the anther apical, the stigma apical.

**Antioquia:** Parque Nacional Natural "Las Orquídeas," Sector Venados, alt. 900 m, 7 June 1988, *A. Cogollo, J. Ramírez & O. Alvarez 3365* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 14412.

This species is characterized by the broadly elliptical, shortly acuminate leaves and a congested, long-pedicellate raceme borne along the back of the leaf. The successive flowers have small, broadly ovate sepals; petals with diverging lower lobes; and a lip with narrow blades with long, incurved apices and an oblong, long-pubescent appendix hanging downward.

**Lepanthes debedoutii** P. Ortiz, Orquideología 24(1): 116, 2006.

Ety.: Named in honor of Ramon de Bedout of Bogotá, Colombia, collector of this species.

**Plant** minute, epiphytic, caespitose; roots slender. Ramicauls slender, erect, estimated 2-3 mm long, enclosed by 2-3 glabrous lepanthiform sheaths. **Leaf** erect, coriaceous, obovate, 12 mm long, 4.5 mm wide, rounded at the apex, acuminate below into a narrowly cuneate base. **Inflorescence** a successively, distantly few-flowered raceme of proportionally huge flowers, borne by an erect, capillary peduncle, 20-25 mm long; floral bract 1.5 mm long; pedicel 5 mm long; ovary 1 mm long, with low crests; **sepals** translucent yellow, glabrous, concave, low-carinate, margins microscopically, sparsely denticulate, the dorsal sepal ovate, acute, acuminate, 6 mm long, 2 mm wide, 3-veined, free from the lateral sepals, the lateral sepals ovate, oblique, acute, shortly acuminate, diverging, 6 mm long, 3 mm

wide, 2-veined, connate 2 mm; **petals** cream, suffused with red toward the base, microscopically pubescent, transversely bifurcate, 0.75 mm long at the bifurcation, the 2 lobes similar, linear-attenuate, 4 mm long, diverging from each other ca. 45°; **lip** bilobed, microscopically pubescent, cream, suffused with rose toward the body, the lobes subtriangular with ill-defined marginal blades, each 1.5 mm long, 1.25 mm wide, the anterior angle obtusely acuminate, the posterior angle rounded with the base of the blade, the body broad, cleft with rounded angles, connate to near the base of the column, the appendix a minute, external, subacute angle from the midvein, between the attachment to the column and the cleft; **column** 1.5 mm long, with the anther dorsal and the stigma ventral.

**Cundinamarca:** San Francisco, in cloud forest, alt. 2600 m, Aug. 2005, collected by R. de Bedout, flowered in cultivation in Bogotá, *P. Ortiz 1248* (Holotype: HPUJ); same collection, flowered in cultivation by R. de Bedout, 12 June 2009, *L. Thoerle 131* (MO), C. Luer illustr. 21478.

This minute species, known only from one area in the Eastern Cordillera of Colombia, is distinguished by a proportionally immense flower, borne successively by a capillary peduncle barely above the tiny, obovate leaf. The sepals are acuminate with the laterals shallowly connate, and the petals are bifurcated into filiform lobes. The lip is bilobed with obliquely triangular lobes surrounding the column. The remnant of the midlobe, the appendix, is merely an external angle along the midvein beneath the body of the lip.

**Lepanthes debilis** Luer & R. Escobar, Orquideología 17(3): 169-172, 1988.

Ety.: From the Latin *debilis*, "weak," referring to the habit of the plant.

**Plant** small, epiphytic, caespitose; roots slender but thicker than the ramicauls. Ramicauls very slender, weak, suberect, 3-6 cm long, enclosed by 7-9 thin, tightly fitting lepanthiform sheaths with minimally dilated ostia with microscopically scabrous margins. **Leaf** thinly coriaceous, more or less spreading, ovate, 25-32 mm long, 11-16 mm wide, the apex acute, long-acuminate, prominently tridenticulate, the base cuneate into the 0.5 mm long petiole. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 6 mm long, borne on top of the leaf by a filiform peduncle ca. 5 mm long; floral bracts 0.75 mm long, lightly muriculate; pedicels 1-1.25 mm long; ovary 1 mm long; **sepals** translucent yellow, glabrous, margins smooth, the dorsal sepal broadly ovate, obtuse, 2.5 mm long, 2.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, connate 1.5 mm into a broadly ovate synsepal 2.5 mm long, 2.5 mm wide, with the apex shallowly bifid, each 2-veined; **petals** orange, bilobed, 1 mm long, 3.2 mm wide, long-ciliate and long-pubescent medially, short-pubescent toward the apices, the upper lobe obliquely subquadrate, the inner angle of the obliquely truncate apex obtuse, the outer angle acute, the lower lobe longer, narrowly triangular, acute, lightly incurved; **lip** orange, bilaminate, the blades oblong with rounded ends, 1.6 mm long, membranous, minutely ciliate, the connectives narrow, oblong, from below the middle of the blade, the body transverse, connate to the base of the column, the appendix narrowly scaphoid with involute margins, pubescent, lying beneath and between the lobes of the stigma; **column** 1 mm long, the anther dorsal with an elongated rostellum overlying the appendix, the stigma ventral.

**Antioquia:** Mun. El Carmen, Alto de San Lorenzo, alt. 2600 m, 17 Sep. 1984, *R. Escobar, C. Dodson & P. Dodson 3465* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 11531; Guatupé, Vereda Santa Rita, Finca Montepinar, alt. 1850 m, 3 Oct. 1986, *Restrepo 52* (MO).

Vegetatively, this species seems to be weak, with the very thin ramicauls barely able to support the leaves. This habit, however, is seen in other species as well. The little, congested racemes lie upon the thin, long-acuminate leaves. The flowers with thin, membranous blades of the lip are reminiscent of those of *Lepanthes mucronata* and its relatives, but the petals lack a medial lobule. The long, narrow appendix lies below and between the lobes of the stigma and extends forward beneath the elongated rostellum.

**Lepanthes declivis** Luer & R. Escobar, Orquideología 21(2): 142-145, 1999.

Ety.: From the Latin *declivis*, "steeply sloped," referring to the labellum.

Syn.: *Lepanthes caetanoae* O. Pérez, E. Parra & Kolan., Orquideología 27(1): 46-54, 2010.

Ety.: In honor of Dr. Creuci María Caetano, of the Universidad Nacional de Colombia, an investigator of the native biodiversity.

**Plant** medium to large in size, epiphytic, caespitose; roots very slender. Ramicauls stout, erect, 5-11 cm long, enclosed by 10-11 brown, microscopically ciliate-scabrous lepanthiform sheaths with oblique ostia. **Leaf** erect, coriaceous, ovate, acute, lightly convex, 5-6 cm long, 3-3.2 cm wide, the base cuneate, contracted into a petiole 3-4 mm long. **Inflorescence** a distichous, congested, successively many-flowered raceme, borne behind the leaf by a filiform peduncle 15-20 mm long; floral bracts muricate, 1.5 mm long; pedicels 2-2.5 mm long; ovary 4 mm long; **sepals** light yellow-green, glabrous, membranous, carinate, widely spread, margins smooth, the dorsal sepal ovate, acute, 4 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, 4 mm long, 2 mm wide, 2-veined, connate 1 mm, the apices acute, acuminate, diverging; **petals** yellow-orange with purple on margins, microscopically pubescent, transversely bilobed, 0.75 mm long, the upper lobes broadly obovate, rounded at the apex, overlapping, 2.5 mm long, 1.75 mm wide, the lower lobe triangular, 1.25 mm long, 0.75 mm wide; **lip** yellow-green, light brown at the base, bilaminate, the blades microscopically ciliate, elliptical, with the bases acute and reflexed, may be abruptly so, with the apices narrowed and recurved beneath the column, 2 mm long expanded, the connectives narrow, from above the middle, the body connate to the base of the column, the sinus bifid, with the appendix small, oblong, ciliate; **column** 1.5 mm long, the anther dorsal, the stigma apical.

**Valle del Cauca:** road between Cali and Buenaventura, collected by E. Valencia, July 1994, flowered in cultivation at Colomborquídeas, 3 June 1995, *C. Luer 17713* (Holotype: MO); Yotoco, Alto de Minas, Farm "Hato Viejo," alt. 1860 m, 18 Feb. 2010, *O. Pérez, E. Sánchez & A. Canizales 512* (holotype of *L. caetanoae*: VALLE).

This species, apparently endemic in the Western Cordillera of Colombia, is similar to the other medium to large species characterized by a congested, distichous raceme of yellow or yellow-green flowers borne along the backside of the leaf. From them, *Lepanthes declivis* is distinguished by long pedicels and ovaries, together exceeding six millimeters in length; the large, overlapping upper lobes of the petals; and the sloping blades of the lip with acute, reflexed bases.

*Lepanthes caetanoae* was described based on differences that seem to be inconsistent with the drawing and photograph accompanying the description. The excellent photograph shows the unusually very long pedicel and ovary combination characteristic of *L. declivis*, but this is missing from both the drawing and the description of *L. caetanoae*. The drawing shows a lip with the characteristic sloping blades with decurved bases, although somewhat less decurved than in some other specimens.

**Lepanthes deficiens** Luer & R. Escobar, Orquideología 17(3): 174-178, 1988.

Ety.: From the Latin *deficiens*, "wanting," because the fragile appendix was absent from some specimens.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-10 cm long, enclosed by 8-12 long attenuate, minutely ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, more or less purple-reticulate beneath, ovate, subacute, with narrowly attenuate apices, 3-4.5 cm long, 1.5-1.8 cm wide, the base broadly cuneate to rounded with a petiole 1.5 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 10 mm long, borne on the dorsum of the leaf by a filiform peduncle 5-15 mm long; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** yellow, glabrous, carinate, margins minutely denticulate, the dorsal sepal broadly ovate-triangular, subacute, 4-5 mm long, 3.5-4.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, apices approximate, 4-5 mm long, connate 3 mm, 4-5 mm wide together, each 2-veined; **petals** orange, minutely pubescent, transversely bilobed, 1 mm long, 4-4.5 mm wide, the upper lobe suboblong-triangular, acute, more or less obtusely angled on the medial margin, the lower lobe narrowly triangular, acute, smaller than the upper lobe; **lip** red-orange,

bilaminate, the blades minutely pubescent, ovate, with rounded apices and bases, 1.5 mm long, the connectives cuneate, from the center of the blades, the body broad, connate to the column at the base, convex and long-ciliate anteriorly, the appendix pedunculate, varying in size from microscopic to an oblong, longitudinally sulcate structure, minutely ciliate; **column** stout, 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Yarumal, Alto de Ventanas, alt. 2400 m., collected by R. Escobar & E. Valencia, 14 Feb. 1984, flowered in cultivation by L. & J. Posada at Colomborquídeas, 19 June 1984, *R. Escobar 3270* (Holotype: MO), C. Luer illustr. 11526; epiphytic in forest remnant ca. 10 km north of Santa Rosa de Osa, alt. 2580 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14143* (MO).

**Boyacá:** El Taladró, collected by E. Valencia, April 1992, flowered in cultivation at Colomborquídeas, 5-9 May 1993, *C. Luer 16729* (MO).

The flowers of *Lepanthes deficiens* are usually borne on the dorsum of the ovate leaf, but occasionally the raceme is directed beneath. The sepals are broadly ovate and minutely denticulate; the petals are pubescent and transversely bilobed; the blades of the lip are ovate; and the appendix protrudes from a convex, pubescent body. In three of the four flowers preserved in liquid, the appendix was either vestigial or had been detached. In one flower, an oblong, channeled appendix was attached to the body by what appeared to be a single capillary cell.

The floral and vegetative characteristics of this species are similar to those of *Lepanthes oscillifera* Luer & R. Escobar. *Lepanthes oscillifera* is distinguished by a lip with an elaborate, hinged appendix, with a glabrous basal segment and a concave, ciliate terminal segment with a bilobulate apex, while the appendix of *L. deficiens* is a small, simple, channeled oblong.

**Lepanthes deformis** Luer & Hirtz, Orchidee (Hamburg) 38(1): 38, 1987.

Ety.: From the Latin *deformis*, "misshapen," in allusion to the appearance of the lip.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, suberect, 2-6.5 cm long, enclosed by 6-7 blackish, tightly fitting, shortly pubescent lepanthiform sheaths. **Leaf** erect in relation to the ramicaul, brown, thickly coriaceous, broadly elliptical to subcircular, 2.5-4 cm long, 1.2-3 cm wide, the obtuse apex shortly acuminate, the rounded base contracted into a petiole 1.5-3 mm long. **Inflorescence** a very dense, distichous, successively flowered raceme up to 6 mm long, borne beneath the leaf by a filiform peduncle 9-11 mm long; floral bracts echinate, 1 mm long; pedicels 2 mm long; ovary 1 mm long; **sepals** dull yellow, glabrous, ovate, obtuse, the dorsal sepal 3.5 mm long, 2.25 mm wide, margins smooth, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, margins minutely denticulate, 3.25 mm long, 2 mm wide, 2-veined, connate 1.5 mm; **petals** yellow-orange with a red border, microscopically pubescent, transversely bilobed, 1.25 mm long, 4 mm wide, the lobes oblong with rounded ends, the lower lobes ciliate, longer than the upper lobes; **lip** rosy orange, bilaminate, the blades connate into a membranous, irregularly veined veil 1.25 mm long over the column, the apical margin erose, the bases rounded, thickened, ciliate, the connectives oblong, connate to the base of the column, the body and sinus pubescent, protuberant with a minute, ovoid, ciliate appendix; **column** 1.5 mm long, twisted to one side, the anther dorsal, the stigma apical.

**Valle del Cauca:** locality unknown, alt. 1900 m, flowered in cultivation by Orquídeas del Valle, 12 March 1997, *C. Luer 18421* (MO).

Also Ecuador (Pichincha, Holotype, *C. Luer 9857*: MO; Esmeraldas), Costa Rica (Alajuela).

Several distant populations of this peculiar species have been found in relative lowland western Ecuador, with a single representative collection known from Colombia and a further disjunct collection from Costa Rica. Endres illustrated this species in Costa Rica circa 1867, the only collection known from Central America. Plants in all the populations are found to exhibit the same unusual development of the lip. The blades are united into a thin, irregularly veined veil overlying the column, which is twisted about 45 degrees and bent to the left.

## **Lepanthes deliciasensis** Luer & R. Escobar, Orquideología 19(2): 95-96, 1994.

Ety.: Named for Páramo de las Delicias in the department of Cauca where this species occurs.

**Plant** large, epiphytic, caespitose; roots coarse. Ramicauls erect, stout, 8-20 cm long, enclosed by 7-11 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, acuminate, 7-12 cm long including the petiole 0.5-1 cm long, the blade 2-3 cm wide, cuneate below into the petiole. **Inflorescence** racemose, up to 6 loose, strict, secund, many-flowered racemes, several flowers open simultaneously, up to 30 cm long including the 3-4 cm long peduncle; floral bracts oblique, 3 mm long; pedicels 2 mm long; ovary 2.5 mm long, the ribs verrucose; **sepals** dark red, carinate, glabrous, margins smooth, the dorsal sepal ovate, concave, acute, acuminate, 7 mm long, 3.25 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals connate into a concave, ovate-triangular synsepal with the acute apex minutely bifid, 8 mm long, 3.75 mm wide, each 2-veined; **petals** dark red, minutely pubescent, transversely bilobed, 1 mm long, 3 mm wide, the lobes subtriangular, the lower lobe smaller; **lip** dark red, bilaminate, the blades minutely pubescent, oblong with rounded ends, 2.5 mm long, the connectives cuneate, the body broad, connate to the column above the base, the sinus broad, with an ovoid appendix minutely bilobulate at the apex; **column** 2.5 mm long, the anther dorsal, the stigma ventral.

**Cauca:** Mun. Totoro, epiphytic in Páramo de las Delicias east of Popayán, alt. 3380 m, 17 Nov. 1982, *C. Luer & R. Escobar 8473* (Holotype: SEL); epiphytic in cloud forest between Totoro and Inza, Páramo de Guanacas, alt. 3150 m, 15 Nov. 1982, *C. Luer & R. Escobar 8424* (SEL).

This large species is apparently endemic in the cool, moist, scrubby forests of the Páramo de las Delicias in southern Colombia. A few long racemes produce a profusion of dark red flowers. Several flowers are open simultaneously in each raceme that far surpasses the leaf. The dorsal sepal and synsepal are acuminate and concave; the petals are small and pubescent. The oblong blades of the lip are also pubescent. The tip of the minute appendix is bifid. Both vegetatively and florally, *Lepanthes deliciasensis* superficially resembles *L. rhombipetala* Schltr., but the former is distinguished by the petals, with both lobes subtriangular rather than broadly oblong; and the attachment of the lip to the column well above the base, rather than at the base.

## **Lepanthes deutera** Luer & Thoerle, Selbyana, 30(1): 7, 2009.

Ety.: From the Greek *deuteros*, "a second, of lesser quality," implying a lip of less appeal.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 25-27 cm long, enclosed by 18-19 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, oblong-ovate, subacute, acuminate into an acute tip, 9.5-11 cm long, 3-3.8 cm wide, the rounded base contracted into a petiole 3-6 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 25 mm long, borne behind the leaf by a filiform peduncle 35-50 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** yellow, glabrous, low-carinate, narrowly triangular, acute, slightly acuminate, margins smooth, the dorsal sepal 8 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 7.5 mm long, 2.6 mm wide, 2-veined, connate 2.5 mm; **petals** transversely bilobed, 1.5 mm long, 4.5 mm wide, microscopically pubescent, the upper lobe orange, suffused with orange-brown on the margins, oblong, obtuse, 3 mm long, 1 mm wide, the lower lobe yellow, oblong, 1 mm wide at the junction with the upper lobe, contracted below into a narrowly oblong lobe, 0.5 mm wide; **lip** orange, suffused with orange-brown, bilaminate, microscopically pubescent, the blades ovoid, convex, rounded at the ends, 2 mm long, flanking the column, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse, filled with a broad, triangular, membranous appendix in apposition with the column; **column** 1.5 mm long, with the anther dorsal and the stigma ventral.

**Chocó:** Carmen de Atrato, alt. 2400 m, flowered in cultivation at Colomborquídeas, 3 June 1995, R. Escobar 5347 (Holotype: MO), C. Luer illustr. 17722.

This large species, known only from one collection in the Western Cordillera of Colombia, is vegetatively similar to *Lepanthes cingens*. It is distinguished from the latter by narrowly triangular, acute, slightly acuminate sepals. The lateral

sepals of *L. cingens* are ovate and terminate in a broad, subacute tip. The petals are similar. The blades of the lip of *L. cingens* are deeply concave from beneath, the two convex blades resembling a bivalved mollusk surrounding the column and the appendix, which is well developed, incurved, and boat-shaped. The blades of the lip of *L. deutera* are merely ovate and slightly concave centrally, and the appendix is reduced to a triangular membrane beneath the column.

**Lepanthes dewildei** Luer & R. Escobar, Orquideología 20(3): 292-294, 1997.

Ety.: Named in honor of Arend de Wilde of Pereira, Colombia, who discovered this species.

**Plant** small, weak, epiphytic, caespitose; roots slender. Ramicauls very slender, erect, 6-8 cm long, enclosed by 7-8 tightly fitting, essentially glabrous lepanthiform sheaths with minimally dilated ostia. **Leaf** purplish, erect, coriaceous, very narrowly ovate, acuminate, 4-5 cm long, 0.5 cm wide, the base cuneate into a petiole ca. 1 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme, up to 3-4 mm long, borne on the dorsum of the leaf by a filiform peduncle 8-13 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 2.5 mm long; **sepals** translucent tan, glabrous, margins smooth, the dorsal sepal broadly elliptical, obtuse, 3.5 mm long, 2.5 mm wide, barely 3-veined, connate to the lateral sepals for 0.4 mm, the lateral sepals ovate, oblique, obtuse, diverging, 3 mm long, 2 mm wide, barely 2-veined, connate 1 mm; **petals** bright orange-crimson, ciliate, minutely pubescent, transversely bilobed, 1 mm long, 8.5 mm wide, 3-veined, the upper lobe more or less oblong with the apical third acuminate, the lower lobe equally long, narrowly triangular, acuminate; **lip** bright crimson, bilaminate, the blades microscopically pubescent, oblong with the bases narrowly obtuse and the apices truncate, ciliate, 2.75 mm long, the connectives short, narrow, the body narrow, connate to the base of the column, the sinus obtuse with an oblong, retuse, concave, microscopically ciliate appendix; **column** 1.5 mm long, with the anther dorsal and the stigma ventral.

**Chocó:** above San José del Palmar, Alto de Los Galápagos, epiphytic in cloud forest, alt. 2050 m, 13 May 1993, *C. Luer, J. Luer, R. Escobar, A. de Wilde & J. Gómez 16848* (Holotype: MO); epiphytic on thin branch, in humid secondary cloud forest, road to Valle department, alt. 2100 m, 22 Feb. 1992, flowered in cultivation at "El Jordan," 25 June 1992, *A. de Wilde 3899* (MO).

This rare species occurs as a twig epiphyte in a wet, windy pass between the departments of Chocó and Valle del Cauca. It is distinguished by the very slender ramicaul with tightly fitting, nondilated sheaths. In common with many similar species, plants usually consist of only one or two ramicauls with leaves. The very narrow, acuminate, purple leaf is more or less erect in relation to the ramicaul, and the short, congested raceme is borne on top of the leaf. The brightly colored flower is distinguished by proportionally large petals, considerably wider than the combined length of the sepals, with acuminate apices. The oblique lobes of the lip obscure the lateral view of the small, oblong appendix.

**Lepanthes diabolica** Luer & R. Escobar, Orquideología 18(1): 42, 1991.

Ety.: From the Latin *diabolica*, "resembling a devil," referring to the red, minutely pubescent flowers with pointed sepals and petals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-10 cm long, enclosed by 7-13 microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** erect, thinly coriaceous, elliptical, acute, with narrowly attenuate apices, 4-6.5 cm long, 1-2 cm wide, the base broadly cuneate to rounded with a petiole 2 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 20 mm long, borne on the dorsum of the leaf by a filiform peduncle 30-40 mm long; floral bracts 1.5 mm long; pedicels 2.5 mm long; ovary 3.5 mm long; **sepals** red, minutely pubescent, carinate, margins minutely denticulate, the dorsal sepal narrowly ovate-triangular, acute, 10.5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals narrowly ovate, oblique, diverging, acute, 10 mm long, connate 3 mm, 4.5 mm wide together, each 2-veined; **petals** orange, minutely pubescent, transversely bilobed, 0.75 mm long, 4.25 mm wide, with a minute, slender, lateral process, the upper lobe suboblong, acute, obtusely angled on the medial margin, the lower lobe narrowly triangular, acute, subequal in length; **lip** bilaminate, the blades yellow with a purple border,

minutely pubescent, elliptical with rounded apices and obtuse bases, 2 mm long, the connectives cuneate, from the basal half of the blades, the body broad, concave centrally, convex below, connate to the column at the base, the appendix suboblong, convex below the middle, the apex subacute, minutely ciliate; **column** stout, 2 mm long, the anther dorsal, the stigma ventral.

**Santander:** epiphytic in cloud forest between Bucaramanga and Berlin, alt. 2700 m, 7 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10158* (Holotype: MO).

This species is easily recognized by the thin, elliptical leaves with long-attenuate apices; and a very congested raceme of red flowers that are borne on the dorsum of the leaf, but soon hang over the margin as the raceme lengthens. The sepals and petals are narrowly acute and minutely pubescent, the petals with a small lateral process. The ligulate appendix protrudes from a cavity on the floor of the body of the lip.

## **Lepanthes dicyrtopetala** Luer & Hirtz, Selbyana, 30(1): 8, 2009.

Ety.: From the Greek *dikyrtopetalus*, "with double-bent petals," referring to the upper lobes.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 11-17 cm long, enclosed by 15-17 nearly glabrous lepanthiform sheaths. **Leaf** erect, thinly coriaceous, elliptical, concave beneath, longitudinally ribbed, carinate beneath, 5-6.5 cm long, 1.5-1.8 mm wide, the apex obtuse, acute, shortly acuminate, the base cuneate into a petiole 3 mm long. **Inflorescence** a congested, successively many-flowered raceme to 12 mm long excluding the peduncle 1-3 cm long; floral bracts 1.5 mm long; pedicels 1.5 mm long; ovary 3 mm long; **sepals** light yellow, glabrous, the dorsal sepal ovate, acute, margins smooth, 7 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals with microscopically cellular-denticulate margins, completely connate into a subcircular, concave synsepal with a small, central convexity, contracted into a shortly acuminate apex, 6 mm long including the tip 1 mm long, 4.5 mm wide, each 2-veined; **petals** orange, red at the base, glabrous, transversely bilobed, 1.5 mm long, 7 mm wide, 3-veined, the upper lobe erect, narrowly oblong, acute, 5 mm long, 1.5 mm wide, bent doubly in the distal third, with a 0.2-mm long marginal apiculum between the upper and lower lobes, the lower lobe triangular, 2 mm long, 1 mm wide at the base, acute; **lip** orange, glabrous, bilaminate, the blades ovate with rounded ends, convex, 2.5 mm long, the connectives oblong, from the middle of the blade, forming an equally broad body, connate to the base of the column, the sinus obtuse with a membranous, oblong, pubescent appendix 1 mm long; **column** stout, 2 mm long, the anther dorsal, the stigma ventral.

**Colombia:** without collection data, flowered in cultivation by Ecuagenera, Gualaceo, Ecuador, 11 Jan. 2004, *A. Hirtz 8670* (Holotype: MO), C. Luer illustr. 21312.

This Colombian species was found in cultivation at Ecuagenera without collection data more specific than its country of origin. The leaf is thinly coriaceous and longer than the congested raceme borne by a longer peduncle. The dorsal sepal is ovate and acute, while the round synsepal is acuminate into an acute tip. The elongated upper lobe of the petals is doubly bent, which at first appeared to be an artifact (and it may be), and a small marginal apiculum appears between the two lobes. The lobes of the lip are obtuse and the appendix is membranous, oblong, and pubescent. The apices of the upper lobes of the petals of *Lepanthes urotepala* Rchb. f. are similarly crimped, but the lateral sepals are connate less than halfway.

## **Lepanthes didactyla** Luer & R. Escobar, Orquideología 16(2): 137, 1984.

Ety.: From the Greek *di-*, "two-," and *dactylos,* "a finger," referring to the two fingerlike lobes of the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-25 mm long, enclosed by 3-5 ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 10-16 mm long including the 1.5-2 mm long petiole, 5-6 mm wide, the base cuneate into the petiole. **Inflorescence** a successive, distantly 2·flowered raceme ca. 2 cm long including the filiform peduncle; floral bracts 1

mm long; pedicels 1.25 mm long; ovary 1.25 mm long; **sepals** translucent tan, glabrous, ovate, acute, carinate, margins smooth, the dorsal sepal 4 mm long, 2.75 mm wide, 3-veined, connate less than 1 mm to the lateral sepals, the lateral sepals diverging, connate 1.5 mm, 4 mm long, 3.5 mm wide together, each 2-veined; **petals** dull yellow, pubescent, bilobed-bifurcate, the lobes oblong, obtuse, 1.5 mm long, 0.3 mm wide, diverging ca. 90° from each other; **lip** red-purple, the blades elliptical with rounded ends, lightly concave, pubescent, 1.2 mm long, the connectives long and narrow, the narrow body connate to the column above the base, the sinus with a minute, triangular appendix; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** Ocaña, near Agua de la Virgen, alt. 1650 m, 4 May 1982, C. *Luer, J. Luer, R. Escobar & D. Portillo 7715* (Holotype: SEL).

This small species from the Eastern Cordillera of Colombia is recognized by the slender, distantly two-flowered raceme slightly longer than the elliptical leaf; pubescent, obtuse, forked petals with the upper and lower lobes separated by about 90 degrees; and the lip with pubescent blades with narrow connectives and a minute, triangular appendix.

**Lepanthes discolor** Luer & R. Escobar, Orquideología 17(3): 183-187, 1988.

Ety.: From the Latin *discolor*, "of different colors," referring to the often different colors of the dorsal and lateral sepals.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4.5-5.5 cm long, enclosed by 9-10 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 22-26 mm long, 10-12 mm wide, the base cuneate into the 1 mm long petiole. **Inflorescence** a subdense, distichous, flexuous, successively several-flowered raceme up to 15 mm long, borne beyond the apex of the leaf by a filiform peduncle 22-28 mm long; floral bracts 1.5 mm long; pedicels 3-4 mm long, with marginal spicules at the junction with the ovary; ovary 1 mm long, with erose wings; **sepals** light yellow or orange to purple with light yellow edges, glabrous, carinate, margins smooth to microscopically cellular-denticulate, ovate, acute, acuminate into short caudae, the dorsal sepal light yellow to purple with light yellow edges, 6-8.5 mm long, 4-4.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, 7-8 mm long, 2.5-3 mm wide, connate 2-2.5 mm, 2-veined; **petals** orange to yellow with the inner margin red, microscopically pubescent, transversely bilobed, 1 mm long, 3 mm wide, the upper lobe oblong with the apex rounded, the lower lobe slightly smaller, triangular, narrowly obtuse; **lip** yellow suffused with red, bilaminate, the blades flat, microscopically pubescent, elliptical-oblong, with the apices narrowly obtuse and the bases rounded, 1.2 mm long, the connectives from below the middle, short, cuneate, oblong, the body narrow, connate to the base of the column, the appendix a tonguelike flap, ciliate, concave, biglandular at the apex; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Urrao, Pabón, Las Cruces, alt. 2400 m, collected by E. Valencia, 23 May 1984, flowered in cultivation by L. & J. Posada at Colomborquídeas, 6 Aug. 1984, *R. Escobar 3359* (Holotype: JAUM; Isotypes: COL, MO), C. Luer illustr. 11527; Jardín, Pueblo Rico, *R. Escobar 5385* (MO), C. Luer illustr. 17158; epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2500 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17662 (*MO).

**Nariño:** Vereda San Miguel, Río Negrito, alt 2490 m, 13 July 1989, *S. Hoyos, M. & M. Avendaño 1272* (HUA).

Also Panama (Chiriquí).

*Lepanthes discolor* is known from widely separated localities in Colombia, with an additional disjunct collection from Panama. The dense, flexuous raceme extends beyond the elliptical leaf, and is distinguished by long pedicels with conspicuously spiculate margins at the junction with the ovaries. The flowers are colorful, with acute and acuminate sepals, the dorsal often a different color than the lateral sepals; the bilobed petals are small and obtuse; the blades of the lip are oblong with short connectives; and the moderately large appendix is hinged, concave, ciliate, and terminates in a biglandular segment.

## **Lepanthes dodsonii** Luer, Phytologia 54(5): 340, 1983.

Ety.: Named in honor of Calaway H. Dodson, investigator of the flora of Ecuador, who discovered this species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-30 mm long, enclosed by 8-12 ciliate lepanthiform sheaths, widely dilated at the ostia. **Leaf** erect, coriaceous, pubescent-ciliate, reticulate-rugose, the elevated veins red on green, ovate-cordate, obtuse, 15-18 mm long, 13-17 mm wide, the base broadly cordate, abruptly contracted into a petiole 1 mm long. **Inflorescence** a congested, successively flowered raceme up to 5 mm long, borne by a filiform peduncle 6 mm long, on the dorsum of the leaf; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 1 mm long, ciliate on the ribs; **sepals** green or yellow with green, often suffused with red centrally, glabrous, carinate-ciliate along the veins externally, margins denticulate, the dorsal sepal broadly ovate, obtuse, shortly acuminate, 5 mm long, 3.25 mm wide, 3-veined, connate 1 mm to the lateral sepals, the lateral sepals ovate, oblique, connate 2 mm, 6 mm long, 4 mm wide together, each 2-veined, acuminate into abruptly everted caudae; **petals** green, pubescent, transversely bilobed, 0.8 mm long, 4.5 mm wide, the upper lobe oblong, acute, the lower lobe smaller, narrowly triangular, acute; **lip** red, bilaminate, the blades narrowly oblong, 1.75 mm long, obtusely angled on the inner margin below the apex, minutely ciliate, the connectives short, cuneate, from the posterior portion of the blade, the body narrow, connate to the base of the column, the appendix small, flat, oblong, obtuse, ciliate; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Parque Nacional Natural "Las Orquídeas," Sector Calles, margen izquierda del río Calles, 1 km arriba de la confluencia de los ríos Polo y Calles, alt. 1460 m, 11 Feb. 1989, *A. Cogollo, D. Cárdenas & O. Alvarez 3870* (MO).

**Risaralda:** Alto de La Linea above Pueblo Rico, alt. 2100 m, R. Escobar 5311, flowered in cultivation at Colomborquídeas, 5-9 May 1993, *C. Luer 16641* (MO).

Also Ecuador (El Oro, Holotype, *C. H. Dodson et al. 8475*: SEL; Esmeraldas; Imbabura).

This species is uncommon but widely distributed in Ecuador and Colombia. It is easily distinguished by the bluntly cordate, rugose-pubescent leaves, often with red veins. Borne on top of the leaf, the flower is green or yellow with green, with denticulate sepals with diverging, acuminate apices; narrow, pubescent petals; and a lip with narrow, angled blades and a ciliate, oblong appendix.

## **Lepanthes dolabrata** Luer & R. Escobar, Orquideología 20(3): 294-295, 1997.

Ety.: From the Latin *dolabratus*, "shaped like an axe," referring to the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls very slender, weak, erect, 2.5-5.5 cm long, enclosed by 8-9 microscopically scabrous, tightly fitting lepanthiform sheaths with acuminate apices. Leaf spreading, thinly coriaceous, narrowly ovate, acute, long-acuminate, 30-40 mm long, 8-13 mm wide, the base cuneate, contracted into a petiole less than 1 mm long. **Inflorescence** a congested, secund, successively many-flowered raceme up to 7 mm long, borne on top of the leaf by a filiform peduncle 7-18 mm long; floral bracts 1 mm long; pedicels 2-2.5 mm long; ovary 1.5 mm long; **sepals** translucent light tan, glabrous, membranous, carinate, widely spread, margins microscopically denticulate, the dorsal sepal broadly ovate, obtuse, 4.5-5 mm long, 3.5-4 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals broadly ovate, oblique, diverging, obtuse, 4-4.5 mm long, connate 1.5 mm into a bifid synsepal 4.5-5 mm wide, each 2-veined; **petals** brown, microscopically cellular, transversely bilobed, 0.5 mm long, 5 mm wide, the upper lobe oblong, obliquely truncate, 3 mm long, 1.5 mm wide, the lower lobe narrowly oblong, with the end rounded, 2.5 mm long, 0.5 mm wide; **lip** brown, bilaminate, the blades microscopically pubescent, elliptical-ovate, with rounded ends, 2 mm long, the apex ciliate, the connectives cuneate, the body connate to the base of the column, the sinus obtuse, with a minute, ovate, membranous appendix; **column** 1.5 mm long, the anther dorsal and the stigma ventral.

**Antioquia:** in cloud forest near the Urrao-Carmen de Atrato pass, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer. R. Escobar, et al. 17642* (Holotype: MO); same area, R. Escobar, W. Teague, et al., 12 December 1994, flowered in cultivation at Colomborquídeas, 23 May 1995, *C. Luer 17533* (MO).

This species, known only from one mountain pass in the Western Cordillera of Colombia, is similar to *Lepanthes cerambyx*, a species known from the Central

Cordillera. Vegetatively, the plants of the two species are indistinguishable, sharing weak, very slender ramicauls and leaves with long-acuminate apices. The flowers of both species have ovate, obtuse sepals, although those of *L. cerambyx* are smaller and smooth-margined. The similar upper lobes of the petals are obliquely truncate. The blades of the lips of these species are also similar, but the appendix of *L. dolabrata* is merely a minute, pubescent lobule, while that of *L. cerambyx* is a concave, pedunculate structure.

**Lepanthes dryades** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(9): 918-920, 1984.

Ety.: Named for the Dryads, tree nymphs of Greek mythology.

**Plant** small, weak, caespitose; roots filiform. Ramicauls slender, erect to horizontal, 2-6 cm long, enclosed by 7-9 close, minutely ciliate lepanthiform sheaths. **Leaf** erect or horizontal in relation to the ramicaul, coriaceous, purplish beneath, ovate, acute, lightly acuminate, 20-40 mm long, 8-14 mm wide, the base cuneate into a 1 mm long petiole. **Inflorescence** a congested, successively flowered raceme up to 5 mm long, borne on top of the leaf by a filiform peduncle 8-12 mm long; floral bracts 1 mm long; pedicels 1.5-2 mm long; ovary 1.5 mm long; **sepals** yellow-orange or brown, glabrous, margins minutely denticulate, the dorsal sepal ovate-triangular, acute, 5 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1.25 mm, the lateral sepals connate 2.5 mm into an ovate synsepal with the acute apex bifid, apices diverging slightly, 5 mm long, 4.5 mm wide, each 2-veined; **petals** yellow, orange, brown to red-brown, minutely pubescent, transversely 3-1obed, 1 mm long, 4-5 mm wide, the middle lobe a slender process of varying lengths, from the outer margin near the middle, the upper lobe oblong-oblique to triangular-oblique, broadly to narrowly obtuse or truncate, the lower lobe narrowly triangular; **lip** orange-brown or purple-brown, the blades thin, oblong-lunate, 1.6 mm long, with the ends rounded, minutely ciliate, lightly adherent medially over the column, the connectives broadly cuneate forming a broad, thick body connate to the base of the column, the body with a central cavity and a protuberant, pubescent sinus with a deflexed, ligulate appendix; **column** stout, 1.5 mm long, the anther dorsal, the stigma ventral.

**Santander:** Mun. Velez, epiphytic in cloud forest, Quebrada Segundo Santamaria between Velez and Landazuri, alt. 2150 m, 4-5 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10137* (Holotype: MO; Isotype: SEL); same collection, flowered in cultivation at Colomborquídeas, El Retiro, *R. Escobar 3250* (COL, JAUM); same area, alt. 2000 m, 4-5 May 1984 *C. Luer, J. Luer, R. Escobar & E. Valencia 100119, 10137, 10139, 10143, 10148, 10149* (MO).

This little species is locally abundant, and varies in flower color and the shape and length of the lobes of the petals. It is distinguished by the thick body of the lip with a central cavity and a comparatively large, deflexed, pubescent appendix. The shorter sepals of the similar *Lepanthes foveata* Luer & R. Escobar are smooth-margined; the lobes of the petals are subequal in length; and the blades of the lip are pubescent, supported by narrow connectives forming a narrow body with an equally well developed cavity.

**Lepanthes dumbo** Luer, Selbyana, 30(1): 9, 2009.

Ety.: Named for Dumbo, for the elephant-eared blades of the lip.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5.5 cm long, enclosed by ca. 8 microscopically ciliate, close lepanthiform sheaths. **Leaf** erect, ovate, acute, rounded at the base, 3.5 cm long, 1.5 cm wide. **Inflorescence** 1-2 congested, successively few-flowered racemes, to 8 mm long, borne on the dorsum of the leaf by capillary peduncles 8-18 mm long; floral bracts oblique, acute, 1.5 mm long; pedicels 1.5 mm long; ovary 1 mm long; **sepals** white, glabrous, broadly ovate, obtuse, shortly acuminate, subcarinate along the veins, margins minutely ciliate, the dorsal sepal 4.25 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals oblique, diverging, 4 mm long, each 2.5 mm wide, 2-

veined, connate 2.5 mm into a bifid synsepal 5 mm wide; **petals** bright purple, transversely bilobed, 1 mm long, 4.5 mm wide, 3-veined, the upper lobe oblong, obliquely incurved at the apex, 2 mm long, 1 mm wide, the lower lobe narrowly triangular, acute, 2.5 mm long, 1 mm wide at the base; **lip** bright purple, microscopically pubescent, bilaminate, the blades 2 mm long, broadly elliptical below the middle, 1.5 mm wide, contracted above the middle and oblong, 0.5 mm wide, overlying the column, with connectives 1.5 mm broad, forming an equally broad body, connate to the column at the base, the appendix minute, in contact with the stigma; **column** semiterete, slender, 2 mm long, with the anther dorsal and the stigma ventral.

**Nariño:** collected by J. L. Aguirre, flowered in cultivation by J & L Orchids, Easton, Connecticut, May 2001, *J & L s.n.* (Holotype: MO), C. Luer illustr. 19918.

This small species from southernmost Colombia is best distinguished by the shape of the blades of the lip. The flowers are produced successively by two simultaneous peduncles of unequal length on the dorsum of the leaf. The broad sepals are white and the petals and lip are bright purple. The blades of the lip overlying the column are transversely elliptical below the middle and contracted into narrow apical portions about a quarter the size above the middle. Viewed laterally, the shape is not obvious. The connectives and body are unusually broad, with a minute appendix in contact with the stigma.

**Lepanthes dunstervilleorum** Foldats, Acta. Bot. Venez. 3: 333, 1968.

Ety.: Named in honor of Mr. and Mrs. Dunsterville, indefatigable collectors of Venezuelan orchids.

Syn.: *Lepanthes hispida* Luer & R. Escobar, Orquideología 16: 146, 1984.

Ety.: From the Latin *hispidus*, "hispid," referring to the particularly coarsely pubescent sheaths of the ramicauls of the clone described.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls erect, stout, 5-18 cm long, enclosed by 10-16 ciliate (sometimes coarsely) lepanthiform sheaths with dilated ostia. **Leaf** erect, often suffused with purple beneath, coriaceous, elliptical-ovate, subacute, acuminate, 3-8 cm long, 1.5-4 cm wide, the base broadly cuneate or rounded, contracted into a petiole 3-5 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 20 mm long, borne behind the leaf by a filiform peduncle 10-20 mm long, up to 3 flowers open simultaneously; floral bracts 1.5-2 mm long; pedicels 1-1.5 mm long; ovary 2 mm long; **sepals** light yellow to greenish white, sometimes suffused with light purple, carinate, glabrous, margins minutely denticulate, the dorsal sepal ovate, subacute, acuminate, 6-8 mm long, 3-4.5 mm wide, 3-veined, connate to the lateral sepals for 0.5-1 mm, the lateral sepals oblique, ovate, subacute to obtuse, acuminate, diverging, 6-8 mm long, 2.5-3.5 mm wide, connate 2-3 mm, 2-veined; **petals** yellow, suffused with red, brown or purple, minutely pubescent, transversely bilobed, 1-1.5 mm long, 3.5-4.5 mm wide, the upper lobe oblong with the apex variable from rounded to contracted on the medial half, the lower lobe obtusely triangular, shorter than the upper lobe, often with a small, subacute to obtuse marginal angle between the lobes; **lip** rose to red-brown, bilaminate, the blades pubescent, oblong with rounded ends, 1.7-2 mm long, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse with the appendix more or less oblong with modifications, long-pubescent; **column** stout, 1.5 mm long, the anther apical and the stigma ventral.

**Antioquia:** Mun. Jardín, Alto de Ventanas, alt. 2800 m, 26 May 1983, flowered in cultivation at Colomborquídeas, 13 Jan. 1984, *R. Escobar 3193* (SEL), C. Luer illustr. 9493.

**Norte de Santander:** epiphytic in cloud forest, Alto de Mefué, north of Toledo, alt. 2600 m, 12 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10293* (MO).

**Santander:** epiphytic in cloud forest between Santa Barbara and Guaca, alt. 2850 m, 14 May 1982, *C. Luer & R. Escobar 7862* (SEL).

**Cundinamarca:** epiphytic in cloud forest above Gutierrez, south of Bogotá, alt. 2700 m, 19 May 1984, *C. Luer et al. 10373* (MO).

**Tolima:** epiphytic in cloud forest of the southern slopes of Nevado de Tolima, alt. 2930 m, 21 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7503* (holotype of *L. hispida*: SEL).

**Quindio:** Alto La Linea, alt. 2800 m, collected by E. Valencia, 1990, flowered in cultivation at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5189* (MO)

**Cauca:** Páramo de Barbillas, alt. 3070 m, 27 July 1978, *C. Luer & R. Escobar 3018* (SEL).

Also Venezuela (Táchira, Holotype, *J. A. Steyermark et al. 98525*: VEN), Ecuador (Morona-Santiago).

*Lepanthes dunstervilleorum* is relatively frequent and widely distributed from Venezuela into Ecuador. It is variable in size, but most variable in the shape of the petals. The illustration published by Foldats with his description accurately reflects some of the forms encountered. The petals are relatively small with an oblong upper lobe that varies from obtuse to contracted medially into a short lobule; the lower lobe is obliquely triangular; and often a marginal angle exists between the lobes. Otherwise, the sepals are minutely denticulate and subacute-acuminate, and the blades of the lip are oblong and pubescent. The pubescent, ovoid appendix is modified in various ways throughout the range.

**Lepanthes echidion** Luer & R. Escobar, Orquideología 16(2): 139, 1984.

Ety.: From the Greek *echidion*, "a little snake," in allusion to the fancied appearance of the flower.

**Plant** very small, epiphytic, caespitose; roots coarse for the plant. Ramicauls slender, erect, 5-15 mm long, enclosed by 3-5 ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, margined, 5-10 mm long, 4-7 mm wide, the apex obtuse to rounded, apiculate, the base rounded, contracted into a petiole 1 mm long. **Inflorescence** a loose, successively few-flowered raceme up to 30 mm long including the filiform peduncle up to 13 mm long; floral bracts 1 mm long, echinate; pedicels 1 mm long; ovary 0.5 mm long, echinate; **sepals** glabrous, acute, acuminate, caudate, carinate, margins denticulate, the dorsal sepal ovate, concave, 6.5 mm long, 3 mm wide expanded, 3-veined, connate to the lateral sepals for 0.75 mm, the lateral sepals narrowly triangular, the outer halves yellow, the inner halves white, diverging, 7 mm long, 1 mm wide, lightly 2-veined, connate 1 mm; **petals** red-brown, microscopically pubescent, transversely bilobed, 1 mm long, 3 mm wide, both lobes oblong with rounded ends, the upper lobe broader; **lip** red-brown, microscopically pubescent, the blades narrowly oblong with narrowly rounded ends, ciliate medially, 2.5 mm long, the connectives short, cuneate, the appendix oblong, 1 mm long, incurved, concave, densely ciliate externally; **column** 1.5 mm long, the anther dorsal with a large, peltate cap, the stigma ventral.

**Norte de Santander:** Mun. Toledo, Alto de Santa Inéz, epiphytic in cloud forest, alt. 1880 m, 23-24 May 1982, *C. Luer, R. Escobar & D. Portillo 7953* (Holotype: SEL); same area, alt. 2100 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10307* (MO, JAUM); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 5 July 1984, *R. Escobar 3278* (COL, JAUM).

This minute species has been found in two different but nearby areas on two trips to Alto de Santa Inéz, the flowers varying little. *Lepanthes echidion* is characterized by the few-flowered raceme twice as long as the little leaves. The caudate sepals are serrulate and echinate along the carinate veins; the petals are transversely bilobed and obtuse; the blades of the lip surpass the short column; and the appendix curves up to associate with the stigma. It is superficially similar to the larger *Lepanthes schizix* Luer from northern Ecuador, but the lateral sepals of the latter are much longer, reaching a length of ten millimeters including the three-millimeter long tails, and the blades of the lip are subequal to the column in length.

**Lepanthes ectopa** Luer, Selbyana, 30(1): 9, 2009.

Ety.: From the Greek *ectopos*, "strange," referring to the unusual floral parts.

**Plant** small, weak, epiphytic, caespitose; roots slender. Ramicauls very slender, erect, 3-4.5 cm long, enclosed by 9-10 minutely ciliate lepanthiform sheaths with oblique ostia. **Leaf** erect, thinly coriaceous, suffused with purple beneath, elliptical, acute, long acuminate, 27-32 mm long, 7-8 mm wide dry, the base cuneate into a petiole 1-1.5 mm long. **Inflorescence** a congested, distichous, successively flowered raceme, borne behind the leaf by a filiform peduncle 9 mm long; floral bracts 2 mm long; pedicels 2 mm long; ovary curved, 2 mm long; **sepals** membranous, glabrous, the dorsal sepal

translucent, suborbicular, inflated, deeply concave, 6 mm long, 5 mm wide unexpanded, 5-veined, margins minutely ciliate, connate to the lateral sepals for ca. 1 mm, the lateral sepals connate to near the middle into a bifid synsepal with acute apices, 6 mm long, 3.5 mm wide, each 2-veined, margins smooth; **petals** red-violet, transversely bilobed, 1 mm long, 5 mm wide, the upper lobe narrowly oblong, 1.5 mm long, 0.3 mm wide, minutely pubescent, with a short-acuminate marginal process opposite the midvein, the lower lobe acute, long-attenuate, 3.5 mm long; **lip** red-violet, pubescent, bilaminate, the blades narrowly oblong, acute, carinate, 2.5 mm long, the connectives broadly oblique, the body thick, triangular, protruding downward, connate to the column about the middle, the appendix a few hairs at the tip of the protruding body; **column** terete, 1.5 mm long, the anther dorsal, the stigma ventral.

**Valle del Cauca:** El Cairo, Cerro del Inglés, Serranía Paraguas, alt. 2200 m, 8 Nov. 1997, *P. A. Silverstone-Sopkin et al. 7967* (Holotype: CUVC; Isotype: MO), C. Luer illustr. 21258.

This little species, apparently endemic in the Western Cordillera of southern Colombia, is characterized by very slender ramicauls bearing long-acuminate leaves. A proportionally large flower is borne in a raceme shorter than the leaf. The dorsal sepal is deeply inflated while the smaller lateral sepals are semiconnate. The petals with long-attenuated lower lobes and the lip with a large, protruding triangular body are similar to those of *Lepanthes skeleton* Luer & R. Escobar. *Lepanthes skeleton* is differentiated by the long-pedicellate raceme, borne by an elongated peduncle; denticulate lateral sepals connate nearly to the tips; and petals with three narrowly linear lobes.

**Lepanthes edwardsii** Ames, Bot. Mus. Leafl., 1(4): 4, 1933.

Ety.: Named in honor of J. B. Edwards who discovered this species.

**Plant** very small, epiphytic, caespitose; roots slender, but comparatively coarse. Ramicauls slender, erect, 8-10 mm long, enclosed by 3-4 closely fitting, minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 8-10 mm long, 4-5 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a loose, successively few-flowered raceme up to 5 mm long, borne beyond the leaf by a filiform peduncle 10-15 mm long; floral bract muricate, 1 mm long; pedicel 0.5 mm long; ovary 0.5 mm long; **sepals** yellow, lightly suffused with brown, rarely "purplish," glabrous, widely spread, margins smooth, the dorsal sepal ovate, concave, 5 mm long, 2.5 mm wide expanded, the apex subacute, contracted into a cauda 1 mm long, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals narrowly ovate, oblique, 5 mm long, 1.6 mm wide, 2-veined, the apices acute, approximate, lightly recurved to incurved and overlapping, contracted into a cauda 1 mm long, connate 1 mm; **petals** microscopically pubescent, convex, transversely bilobed, 1 mm long, 2 mm wide, the upper lobe obliquely oblong-ovate with apex rounded, the lower lobe much shorter, yellow-white, semicircular; **lip** yellow-white, bilaminate, the blades microscopically pubescent, narrowly falcate, with the acute apices incurved, 2.5 mm long, the connectives narrow, from below the middle of the blade, the body narrow, connate to the base of the column, the appendix minute, triangular, inflexed; **column** 0.75 mm long, the anther apical, the stigma ventral.

**Chocó:** Planta epifita muy escasa sólo se han encontrado 2 ejemplares en bosque secondario en 'totumo y ciruelo' a nivel del mar, July 1988, *G. Misas Urreta 74* (HPUJ).

Also Honduras (Comayagua, Holotype, *J. B. Edwards 96*: AMES), Guatemala (Alta Verapaz), Nicaragua (Jinotega), Costa Rica (Heredia).

Endres sent this species to Reichenbach with detailed illustrations and descriptions with the proposed names *Lepanthes elegans* and *L. hookeriana*, but inexplicably, it remained unpublished until it was described much later by Ames from a collection from Honduras. It is found locally but widely distributed from Guatemala into Costa Rica with a disjunct collection in Chocó, Colombia, where the collector noted that it is very rare. It is distinguished by the very small size of the plant with elliptical leaves; a loose raceme of comparatively large flowers, surpassing the leaf by about twice its length; flowers with ovate sepals with one-millimeter-long tails; oblique, transversely ovate, obtuse petals, with a much

smaller lower lobe; and a lip with narrowly falcate blades and a short, triangular, incurved appendix.

*Lepanthes edwardsii* is similar to the exclusively Central American *L. johnsonii* Ames, with petals and lip close in both size and shape. The sepals of *L. johnsonii* are twice the length of those of *L. edwardsii* and usually purple in color. Ames notes a single specimen of *L. edwardsii* as having sepals "which, except for a yellowish tinge at base, are purplish rather than yellow."

**Lepanthes effusa** Schltr., Repert. Spec. Nov. Regni Veg. 14: 126, 1915.

Ety.: From the Latin *effusus*, "spread out," referring to the loose inflorescence.

Syn.: *Lepanthes millei* Schltr., Repert. Spec. Nov. Regni Veg. 14: 127, 1915.

Ety.: Named in honor of Father Louis Mille of Quito, Ecuador, who collected this species.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-8 cm long, enclosed by 5-8 minutely ciliate-scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, often suffused with purple beneath, elliptical, obtuse, 1.5-3.5 cm long, 0.5-1.7 cm wide, the base cuneate into a petiole 3-4 mm long. **Inflorescence** a loose, flexuous, successively several- to many-flowered raceme up to 22 cm long including the slender peduncle 1-5 cm long; floral bracts 0.75-1.75 mm long; pedicels 1-2 mm long; ovary 1-1.5 mm long; **sepals** yellow, orange, orange-brown, red-brown, or brown, glabrous, margins smooth, the dorsal sepal triangular, concave below the middle, acute, 5-10 mm long, 3-5.5 mm wide, 3-veined, connate to the lateral sepals for 1-1.5 mm, the lateral sepals connate to near the apices into an ovate, acute, bifid synsepal, 4.75-11 mm long, 3-6 mm wide, each 2-veined; **petals** yellow with purple on margins or base, minutely pubescent, transversely bilobed, 1-1.5 mm long, 3.75-4.75 mm wide, the lobes oblong, obtuse, oblique, the lower lobe smaller; **lip** yellow, suffused with purple, bilaminate, the blades oblong with the ends rounded, more or less concave, minutely ciliate, 1.3-2 mm long, the connectives narrow, obliquely backward from the base of the blade to the base of the column, the body narrow, the appendix minute, triangular; **column** terete, 1 mm long, the anther apical, the stigma ventral.

**Antioquia:** Urrao, Páramo de Frontino, El Río, alt. 3120 m, 7 Apr. 1989, *R. Callejas, J. Betancur, O. Escobar & J. Quintero 7795, 7817* (HUA).

**Cundinamarca:** above Chia, northeast of Bogotá, alt. 2780 m, 15 May 2007, flowered in cultivation, June 2009, by Arturo Carrillo 086-B, *L. Thoerle 103* (MO).

Also Ecuador (Pichincha, Holotype of *L. effusa*, *L. Sodiro 25* destroyed at B, Neotype designated by C. Luer [1996b: 74] *A. Hirtz 2057*: MO; holotype of *L. millei*, *L. Mille 8* destroyed at B, Neotype designated by C. Luer [2010: 154], *L. A. Mille 8*: QPLS; Carchi; Imbabura; Bolívar; Tungurahua; Chimborazo; Morona-Santiago; Azuay).

This species occurs locally and frequently on both sides of the Andes of Ecuador, continuing into southern and central Colombia. It is characterized by elliptical leaves and relatively large flowers borne in a loose, flexuous raceme. The size of the plant, the length of the inflorescence, and the size of the flowers vary considerably. Sometimes the tip of an entire raceme with small flowers barely surpasses the leaf, but usually the raceme does not begin to bear flowers until it has lengthened beyond the leaf. Simultaneously, Schlechter described a small-flowered form as *Lepanthes millei* following a description of a larger-flowered form as *L. effusa*. His illustrations show what appear to be two very different species, but there are many intermediates between these extremes, creating a continuum, and we believe they are conspecific. The illustrations of *L. millei* in Dunsterville and Garay's Venezuelan Orchids Illustrated and Foldats's Orchidaceae in Flora de Venezuela show *L. glochidea* Luer.

The flowers of *Lepanthes effusa* are distinguished by an acute dorsal sepal and a similar but shortly bifid synsepal. The lobes of the petals are narrowly oblong and opposite. The blades of the lip are oblong and borne by narrow, obliquely backward connectives from their bases. Similar species are known from Colombia:

*L. marthae* Luer & R. Escobar is most easily distinguished by the dilated base of the column, with the lip and the petals connate above the base; and *L. tamaensis* Foldats by its lip with thick, cuneate connectives.

**Lepanthes elata** Rchb. f., Beitr. Orchid.-K.C. Amer. 90-91, 1866.

Ety.: From the Latin *elatus*, "tall," referring to the habit of the plant.

Syn.: *Lepanthes oteroi* Luer & R. Escobar, Orquideología 22(1): 42-45, 2001.

Ety.: Named in honor of Joel Tupac Otero of the University of del Valle, Cali, Colombia, who discovered this species.

**Plant** medium to large in size, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 10-30 cm long, enclosed by 9-17 shortly ciliate lepanthiform sheaths with oblique ostia. **Leaf** erect, coriaceous, elliptical to broadly elliptical, 5-13 cm long, 2-5.5 cm wide, the apex obtuse, shortly acuminate, the base rounded to cuneate, contracted into a petiole 3-4 mm long. **Inflorescence** a dense, distichous, successively many-flowered raceme up to 4 cm long, borne behind the leaf by a filiform peduncle 2-4 cm long; floral bracts oblique, 2 mm long; pedicels 1-1.5 mm long; ovary 2-3 mm long; **sepals** yellow, glabrous, margins smooth, the dorsal sepal ovate-triangular, acute, 9-10 mm long, 3.75-4.5 mm wide, 3-veined, connate to the lateral sepals for 1-1.5 mm, the lateral sepals ovate, subacute, acuminate, oblique, diverging, 9-10 mm long, 3.75-4.25 mm wide, connate 2.5 mm, 2-veined; **petals** yellow-orange with a red border, minutely pubescent, transversely bilobed, 1.25-1.5 mm long, 3-5 mm wide, 3-veined, the lobes oblong, oblique, with rounded ends, the upper lobes larger and more or less overlapping above the column; **lip** yellow, suffused with rose, bilaminate, the blades microscopically pubescent, oblong-ovate with rounded ends, 2 mm long, the connectives cuneate, the body connate to the base of the column, the sinus obtuse, with a small, pedunculated, pubescent appendix; **column** stout, 1.5-2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Alto de Cuevas, alt. 2000 m, collected April 1982 (C. Luer 8991), flowered in cultivation at Colomborquídeas, 29 April 1984, *C. Luer 10039* (MO); Frontino, in disturbed wet/very wet montane vegetation, km 15.5 of road Nutibara-Murrí, alt. 1830 m, 22 Sep. 1987, *J. L. Zarucchi, A. E. Brant & C. J. Castaño 5636* (MO); San Luis, Vereda Chocó, alt. 1600 m, collected by E. Valencia, 1987, flowered in cultivation at Colomborquídeas, 18 March 1989, JM 109, *C. Luer 14219* (MO); Alto de Cuevas, collected by E. Valencia, December 1990, flowered in cultivation at Colomborquídeas, 16 May 1993-19 May 1993, *C. Luer 16866* (MO).

**Norte de Santander:** epiphytic in cloud forest, Alto de Santa Inéz, alt. 2100 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10318* (MO).

**Valle del Cauca:** Cali, Finca El Diamante, alt. 1900 m, 28 Mar. 1992, *J. T. Otero 129* (MO); same area, 10 Oct. 1992, *J. T. Otero 274* (holotype of *L. oteroi*: CUVC; isotype: MO), C. Luer illustr. 18459.

**Nariño:** Ricaurte, trail from La Planada to Pielapialt, alt. 1600-1800 m, 22 July 1988, *A. Gentry, O. de Benavides, C. Samper, P. Velasquez & B. Ramírez 63634* (MO).

Also Costa Rica (s. loc., Holotype, *H. Wendland 844*: W; Alajuela; Heredia; Limón; Cartago; San José; Puntarenas) and Panama (Chiriquí).

This large species occurs relatively frequently throughout Costa Rica, Panama and Colombia. It was first found by Wendland at Desengaño, a source of several other collections described by Reichenbach. Endres made numerous collections, but little data about these collections survive. Large leaves, more or less suberect and convex, are borne by tall, robust ramicauls. Relatively large, yellow flowers are produced in a dense raceme along the concave back surface of the leaf. The sepals are glabrous and acute with smooth margins; the oblong upper lobes of the petals overlap above the column and lip; the blades of the lip are ovate; and the appendix is minute and pedunculate. *Lepanthes elata* closely resembles some of the larger plants of *L. monitor*, with which it grows sympatrically in parts of Colombia, but the upper lobe of the petals of the latter is distinguished by narrowed, everted apices.

A very robust form with lateral sepals more abruptly contracted into short tails was described as *Lepanthes oteroi.*

**Lepanthes elephantina** Luer & R. Escobar, Orquideología 16(2): 141, 1984.

Ety.: From the Latin *elephantinus*, "of ivory or an elephant," referring to the tusklike blades of the lip.

**Plant** medium to large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 5-19 cm long, enclosed by 7-12 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple beneath, elliptical, 3.5-6 cm long, 1.7-2.6 cm wide, the apex obtuse, contracted into a narrow, apical segment 1-1.5 cm long, mucronate, the base rounded, contracted into a petiole 3-4 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 3.5 cm long, borne behind the leaf by a slender peduncle 1-1.5 cm long; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** purple, edged in yellow, glabrous, margins denticulate, the dorsal sepal concave, ovate-triangular, acute, acuminate, 7.5 mm long, 4.5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals narrowly triangular, oblique, acute, diverging, 8 mm long, 2.25 mm wide, connate 1 mm, 2-veined; **petals** bright rose, minutely pubescent, transversely bilobed, 0.8 mm long, 4 mm wide, the upper lobe narrowly oblong, obtuse, angled outward, the lower lobe very short, subquadrate, truncate; **lip** bright rose, bilaminate, the blades glabrous, narrowly ovate, acute, narrowly acuminate, incurved, 3 mm long, obtuse at the base, the connectives narrowly cuneate, from the center of the blades, the body narrow, connate to the column near the base, the sinus obtuse, traversed by a broad membrane with a minute, slender, clavate, pubescent appendix; **column** stout, 2 mm long, the anther dorsal, the stigma ventral.

**Nariño:** east slopes of Volcán Galeras, alt. 3200 m, 21 Jan, 1979, *C. Luer & J. Luer 3470* (Holotype: SEL).

**Putumayo:** epiphytic in scrub forest in the páramo between La Cocha and Sibundoy, alt. 3000 m, 26 Jan. 1987, *C. Luer, J. Luer, C. H. Dodson, O. de Benavides, R. Escobar & E. Valencia 12524* (MO).

Also Ecuador (Imbabura, Bolívar, Tungurahua).

All known collections of *Lepanthes elephantina* have come from high altitudes in southern Colombia and neighboring Ecuador, the lowest being 3000 meters. This species is characterized by a sturdy plant bearing congested racemes shorter than the purple, elliptical leaves that are abruptly contracted into a narrow apical segment. The sepals are acute and denticulate. The upper lobes of the petals are erect, narrowly oblong, and protruding, while the much smaller lower lobes are very short and broad. The blades of the lip are narrowly ovate with attenuated apices that more or less curve up, resembling minute elephant tusks.

**Lepanthes elongata** Luer & Hirtz, Lindleyana 2(2): 99, 1987.

Ety.: From the Latin *elongatus*, "elongated," referring to the length of the ramicauls, inflorescence and upper lobes of the petals.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender to stout, erect, 8-23 cm long, enclosed by 8-13 closely fitting, microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly ovate, acute, 4-9 cm long, 1-1.7 cm wide, the base cuneate into a petiole 5-10 mm long. **Inflorescence** a loose, flexible, strict, successively many-flowered raceme up to 30 cm long including the slender peduncle 8-15 cm long, distantly flowered below, subdensely flowered above; floral bracts oblique, 2-3 mm long; pedicels 1.5-2 mm long; ovary costate, 1 mm long; **sepals** red-purple, glabrous, ovate, acute, acuminate, margins smooth, the dorsal sepal 5-7 mm long, 3-4 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, 5-7.5 mm long, 2-2.5 mm wide, connate 1.5-2.5 mm, 2-veined; **petals** red-purple, glandular-cellular, transversely bilobed, 0.75-1 mm long, 3-4 mm wide, the lobes triangular, oblique, long-acuminate, the upper lobe longer; **lip** red-purple, bilaminate, the blades shortly pubescent, ovate, convex, obtuse, 1.5 mm long, the connectives broad, short, the body broad, connate to the column above the base, the sinus obtuse with a pubescent, triangular appendix; **column** 1.5 mm long, the anther apical, the stigma ventral.

**Nariño:** La Cocha, alt. 2950 m, flowered in cultivation at Colomborquídeas MF 111, 18 March 1989, *C. Luer 14225* (MO).

**Putumayo: e**piphytic in scrub forest in the páramo between La Cocha and Sibundoy, alt. 3000 m, 26 Jan. 1987, *C. Luer, J. Luer, C. H. Dodson, O. de Benavides, R. Escobar & E. Valencia 12526* (MO).

Also Ecuador (Napo, Holotype, *A. Hirtz 1811*: MO; Pichincha).

This species of the high eastern slopes of the Andes of northcentral Ecuador and southern Colombia is distinguished by long ramicauls; narrowly ovate leaves; and a long, straight, many-flowered inflorescence, borne by a peduncle as long as or much longer than the leaf. Low in the raceme the flowers are distant, but high in the raceme the flowers are spaced much more closely, and sometimes two or three flowers open simultaneously. The upper lobes of the petals are long-acuminate. The lip is very similar to that of *Lepanthes biloba*, which also has long inflorescences, but flexuous rather than strict and borne by peduncles much shorter than the leaf.

**Lepanthes equicalceolata** Luer & R. Escobar, Orquideología 19(1): 24, 1993.

Ety.: From the Latin *equi calceolatus*, "with a little horseshoe," referring to the lip.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-5 cm long, enclosed by 7-8 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 17-23 mm long, 10-11 mm wide, cuneate below into a petiole less than 1 mm long. **Inflorescence** a subdense, secund, successively several-flowered raceme up to 15 mm long, borne beyond the leaf by a slender peduncle 12-15 mm long; floral bracts lightly muricate, 1.5 mm long; pedicels 5-6 mm long; ovary echinate, 3 mm long; **sepals** yellow with large, irregular, brown spots below the middle, glabrous, concave, carinate, margins minutely ciliate, the dorsal sepal transversely ovate, 8 mm long, 11 mm wide expanded, 5-veined, connate to the lateral sepals for 5 mm to form a sepaline cup, the apex obtuse, abruptly contracted into a slender cauda 3 mm long, the lateral sepals broadly ovate, oblique, diverging, 6 mm long, 5 mm wide, 2-veined, the apices obtuse, contracted into slender caudae 2.5 mm long; **petals** dull yellow-brown, erect, single-lobed, oblong, longitudinally carinate, glabrous, 3 mm long, 1.25 mm wide, the apex rounded; **lip** dull yellow-brown, horseshoe-shaped, surrounding the column, each half 1.25 mm long, glabrous, the apices truncate, minutely apiculate at the base, connate to the base of the column, **column** 1.5 mm long, the anther dorsal and the stigma apical.

**Chocó:** Mun. San José del Palmar, Alto Galápagos, alt. 2000 m, collected by E. Valencia, Sep. 1990, *R. Escobar 4059* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 14920; same area, alt. 2050 m, 13 May 1993, *C. Luer, J. Luer, R. Escobar, A. de Wilde & J. Gómez 16800* (MO).

This species, known only from one locality in the Western Cordillera, is similar to *Lepanthes felis* Luer & R. Escobar, which is also found nearby. *Lepanthes equicalceolata* is easily distinguished by the long-pedicellate raceme, spiculate ovary, shortly caudate sepals, and horseshoe-shaped lip. The sepaline cup, formed by the deep connation of the dorsal and lateral sepals, is shallower than that of *L. felis*, and the erect, carinate, oblong petals are only half as long as those of *L. felis.*

**Lepanthes eros** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(2): 160, 1984.

Ety.: Named for Eros, the mythological Greek god of love.

**Plant** very small, floriferous, epiphytic, caespitose; roots filiform. Ramicauls slender, erect, 1-2.5 cm long, enclosed by 3-4 ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple beneath, elliptical, obtuse, 12-15 mm long, 7-9 mm wide, cuneate below into a petiole 3 mm long. **Inflorescence** a subdense, distichous, flexuous, successively flowered raceme up to 15 mm long, borne behind the leaf by a filiform peduncle 4-9 mm long; floral bracts 0.5 mm long, echinate; pedicels 1.5 mm long; ovary 1 mm long; **sepals** similar, rose to orange, glabrous, narrowly triangular, acute, margins smooth, 1.75 mm long, 0.8-1 mm wide, 1-veined, the dorsal sepal connate basally to the lateral sepals for less than 0.5 mm, the laterals connate less than 0.5 mm, diverging widely; **petals** large, yellow, suffused with red, microscopically cellular-pubescent, transversely elliptical, 0.6 mm long, 2.5 mm wide, the lobes similar, narrowly triangular obtuse; **lip** minute, rose, microscopically cellular-pubescent, the blades ovate, 0.5 mm long, embracing the column below the middle, the apices narrowly obtuse, the bases rounded, the connectives cuneate, connate to the column above the base, the appendix a minute, pubescent lobule at the apex of the sinus; **column** red-purple, cylindrical, 1 mm long, the anther and the stigma apical.

**Antioquia:** Mun. Río Negro, Río Piedras, alt. 2150 m, 29 Apr. 1983, *C. Luer, J. Luer, R. Escobar, M. Webb & A. Pridgeon 8869* (Holotype: SEL); Pabón, epiphytic in forest remnant along the road to Santa Ana, alt. 2050 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, B. López, P. López & G. Arteaga 17671* (MO).

**Risaralda:** Pueblo Rico, alt. 1800-2000 m, flowered in cultivation at Colomborquídeas, 11 May 1985, *C. Luer 11328* (MO); same area, alt. 2000 m, collected by E. Valencia, June 1991, flowered in cultivation at Colomborquídeas, 3 Jan. 1993, *R. Escobar 5243* (MO).

This minute, floriferous species has been found on several occasions in the Central Cordillera. The subdense, flexuous racemes, sometimes longer than the leaf, bear flowers with three equal, narrowly triangular sepals; petals larger than the single-veined sepals; and a tiny lip embracing the long, protruding column above the base.

The Colombian *Lepanthes micellilabia* Luer & R. Escobar shares a small flower with the characteristic expanded, triangular sepals and protruding column, but the petals are tiny rather than longer than each sepal. Two similar Ecuadorian species can be readily distinguished from the Colombian species: the monstrous column of *L. pelorostele* Luer & Hirtz is flanked by tiny, trilobed, filiform petals; and *L. rigidigitata* Luer & Hirtz has a prolific habit.

**Lepanthes erythrocles** Luer & R. Escobar, Orquideología 18(1): 44, 1991.

Ety.: From the Greek *erythrocles*, "great red," referring to the name "Big Red" affectionately applied to this species by Janet Kuhn.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-5 cm long, enclosed by 3-5 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, 2-3 cm long, 1-1.5 cm wide, the rounded base contracted into a petiole ca. 2 mm long. **Inflorescence** a loose, successively few-flowered, pendent raceme up to 3 cm long, borne by an arching, filiform peduncle 3-3.5 cm long; floral bracts 1.5 mm long; pedicels 1.5-2.5 mm long; ovary curved, 2 mm long; **sepals** light green, largely suffused with red-brown, glabrous, carinate, the dorsal sepal broadly ovate, concave, obtusely acuminate-acute, 15 mm long, 10 mm wide incompletely expanded, the free margins lightly revolute and minutely erose, 3-veined, connate to the lateral sepals for 7 mm to form a globose sepaline cup, the lateral sepals oblique, subovate, 15 mm long, 10 mm wide unexpanded, connate 7 mm, deeply concave below the middle, deflexed and approximate with revolute margins above the middle, the apices subacute, each 2-veined; **petals** yellow, transversely bilobed, cellular-glandular, 1 mm long, 4 mm wide, the upper lobe oblong, obtuse, the lower lobe obliquely triangular, acute; **lip** rose with the inner margin purple, bilaminate, the blades oblong with rounded ends, glabrous but with long-ciliate margins, 2 mm long, the connectives broadly cuneate, forming a broad body, connate to the base of the column, the sinus obtuse, with the appendix scaphoid, pubescent with an apical gland; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Cundinamarca:** collected by J. Kuhn near Fusagasugá, ca. 1975, flowered in cultivation at J & L Orchids, Easton, Connecticut, 25 April 1987, *C. Luer 12808* (Holotype: MO).

*Lepanthes erythrocles* has been in cultivation under the name "Big Red" at J & L Orchids since its discovery by Janet Kuhn in about 1975. It is easily recognized by the large, red-brown and green, subglobose flower suspended in a loose, successively flowered, pendent raceme. Within the cavity of the flower, the petals, lip, and column form a compact apparatus on the back wall. The blades of the lip are long-ciliate, and the appendix is pubescent and boat-shaped.

This species is similar to *Lepanthes chelonion* and *L. nautilus*, both also from the Eastern Cordillera of Colombia, and both with large, showy, concave flowers. The lateral sepals of *L. erythrocles* are deflexed at about the middle, with divergent apices, rather than concave basally with approximate apices.

## **Lepanthes escifera** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(1): 28, 1984.

Ety.: From the Latin *esca,* "a bait," and *-fir,* "bearing," referring to the presumed function of the hairy, pedunculated appendix.

**Plant** small to medium in size, weak, epiphytic, caespitose; roots slender. Ramicauls suberect to transverse, very slender, 2.5-11 cm long, enclosed by 6-11 close, microscopically scabrous lepanthiform sheaths. **Leaf** spreading to pendent, coriaceous, purple beneath, ovate, acute, long-acuminate, apiculate, 2-4 cm long, 0.8-1.6 cm wide, the rounded base abruptly contracted into a petiole 1 mm long. **Inflorescence** a single flower borne successively in a very congested, distichous raceme up to 10 mm long, borne by a filiform peduncle 5-15 mm long lying upon the leaf; floral bracts 0.75 mm long; pedicels 1-1.5 mm long; ovary 1 mm long; **sepals** translucent yellow, glabrous, transversely ovate, obtuse, margins cellular-ciliate, the dorsal sepal 3 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, connate to above the middle, 3 mm long, 4 mm wide together, each 2-veined; **petals** orange, suffused with red at the base, microscopically cellular-pubescent, transversely oblong, 1 mm long, 3 mm wide, with a minute apiculum on the outer margin between the lobes, the upper lobe truncate, subquadrate, the lower lobe triangular, acute; **lip** red-purple, the blades flat, elliptical, glabrous, with subacute ends, 1.6 mm long, the connectives short, broadly cuneate, the broad body connate to the base of the column, the sinus obtuse with a pedunculated, pubescent, more or less ovate-triangular, concave appendix; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Frontino, Alto de Cuevas, alt. 2050 m, 4 May 1983, C. *Luer, R. Escobar, et al. 8986* (Holotype: SEL; Isotype: COL); same locality, 12 April 1974, *R. Escobar et al. 1201* (JAUM); Cocorná, epiphytic in cloud forest near Río Cocorná, alt. 1900-2000 m, 2 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10087* (MO); Guatapé, Finca Montepinar, alt. 1850 m, 25 Apr. 1985, *L. K. Albert de Escobar, A. Uribe & J. Vallejo 5088* (MO); location unknown, collected by E. Valencia, 1989, flowered in cultivation at Colomborquídeas, 1989, *R. Escobar 5224* (MO); Frontino, Alto de Cuevas en la via Nutibara-La Blanquita, alt. 2080 m, 16 Feb. 1991, *R. Callejas, F. J. Roldan & M. V. Arbelaez 10051* (HUA).

**Risaralda:** Altaquer, alt. 1400 m, collected and cultivated by Luis Carlos Vieira in Medellín, 12 April 1988, *C. Luer 13177* (MO).

**Santander:** epiphytic in cloud forest west of Velez, road to Landazuri, alt. 2150 m, 4-5 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10124* (MO).

In common with many species similar to *Lepanthes mucronata*, a single flowering growth of *L. escifera* often bears a raceme with a short peduncle accompanied by a second raceme with a twice longer peduncle. The appendix of this species is a pedunculated, pubescent organ originating in the broad sinus of the lip. The blades of the lip are glabrous, the sepals are very broad, and the petals are minutely pubescent with a minute apiculum between the lobes.

## **Lepanthes escobariana** Garay, Orquideología 4: 76, 1969.

Ety.: Named in honor of Gilberto Escobar R., collector of the species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-3.5 cm long, enclosed by 4-6 ribbed, microscopically ciliate lepanthiform sheaths without dilated ostia. **Leaf** erect, coriaceous, elliptical, subacute, 2.5-4 cm long, 1-1.3 cm wide, cuneate below into a petiole ca. 2 mm long. **Inflorescence** a loose, flexuous, arching, successively many-flowered raceme up to 15 cm long, 1 to 2 flowers open simultaneously, borne by a slender peduncle ca. 5 cm long, the flowers large, resupinate in a pendent raceme; floral bracts 1.5 mm long; pedicels 2-4 mm long; ovary costate, curved, 1.5 mm long; **sepals** yellow-orange, suffused with red-brown, glabrous, margins smooth, the dorsal sepal broadly ovate, acute, 14 mm long, 12 mm wide, 3-veined, connate to the lateral sepals for 6 mm to form a concave sepaline cup, the lateral sepals oblique, subovate, connate 14 mm into a broadly ovate, shortly bifid synsepal 15 mm long, 14 mm wide, with subacute apices, each 2-veined; **petals** purple, transversely suboblong, bilobed, 1 mm long, 5 mm wide, the lobes subequal, subtriangular, obtuse; **lip** light green, glabrous, bilaminate, the blades convex, elliptical with rounded ends, 2 mm long, the connectives broadly cuneate, forming a broad body, perpendicular to and decurrent on the column to the base, the sinus obtuse, with a minute, rounded appendix; **column** slender, curved, 2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Abejorral, collected by *G. Escobar 531* (Holotype: AMES); without collection data, flowered in cultivation at Colomborquídeas, 21 Apr. 1983, *C. Luer 8746* (SEL); without collection data, flowered in cultivation at J & L Orchids, Easton, Connecticut, 25 April 1987, *C. Luer 12835A* (MO); without collection data, flowered in cultivation at Colomborquídeas, 16-19 May 1993, *C. Luer 16872* (MO).

This species is uncommon and endemic in the department of Antioquia. Large, yellow and orange, concave, bowl-like flowers are produced successively in a resupinate position in a loose, flexuous, elongating raceme. The base of the body of the lip, holding the blades perpendicular to the column, is long-decurrent on the undersurface of the slender column. The shape of the broad sepaline bowl resembles that of *Lepanthes cymbium*, but *L. cymbium* is readily distinguished by its smaller flowers and a lip with long, narrow blades that greatly exceed the column.

**Lepanthes eucerca** Luer & Thoerle, Harvard Pap. Bot. 16(2): 328, 2011.

Ety.: From the Greek *eu-*, "good," and *kerkos*, "a tail," referring to the long-caudate sepals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-7 cm long, enclosed by 6-8 long-ciliate lepanthiform sheaths. **Leaf** erect, thickly coriaceous, narrowly ovate, acute, 3.5 cm long, 1.2 cm wide, contracted below into a petiole 2 mm long. **Inflorescence** 2-3 erect, congested, distichous, successively many-flowered racemes to 25 mm long, including the peduncle 5-10 mm long, borne behind the leaf; floral bracts echinate, 2 mm long; pedicels 1.5 mm long; ovary costate, 2 mm long; **sepals** yellow suffused with red, glabrous, margins prominently denticulate, long-caudate, the dorsal sepal ovate, acute, long-acuminate, 7.5 mm long, 3.25 wide, 3-veined, connate to the lateral sepals for ca. 1 mm, the lateral sepals ovate, oblique, diverging, acute, long-acuminate, 9 mm long, 2 mm wide, 2-veined, connate 1 mm; **petals** yellow with red inner margin, minutely pubescent, transversely bilobed, 0.5 mm long, 2.25-3.5 mm wide, the upper lobe narrowly oblong, obtuse, 2-3 mm long, the lower lobe triangular, acute, 1-1.5 mm long; **lip** red, minutely ciliate-pubescent, bilaminate, the blades incomplete, curved, elliptical-ovate, 1.6 mm long, the apex incurved, acute, free of the blade, the connectives broadly cuneate, embracing the column, the body broad, connate just above the base of the column, the appendix microscopic, setiform, at the sinus; **column** stout, 1.5 mm long, with the anther and the stigma apical, occupying half the length of the column.

**Norte de Santander:** Páramo de Jurisdicciones, alt. 3150 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10232* (Holotype: MO).

This species grows in subpáramo forest with *Lepanthes aquila-borussiae* and hundreds of plants of *Masdevallia fragrans* Woolward in the Páramo de Jurisdicciones in the Eastern Cordillera. *Lepanthes eucerca* resembles *L. aquila-borussiae*, but is distinguished by nearly twice larger flowers with long-acuminate tails. Both species share a microscopic appendix, but that of *L. aquila-borussiae* is pubescent and pedunculate, several times larger than the bristle of *L. eucerca*.

**Lepanthes exaltata** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(4): 370, 1984.

Ety.: From the Latin *exaltatus,* "exalted," referring to the superior qualities of the plant.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-4.5 cm long, enclosed by 2-4 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 15-25 mm long, 6-12 mm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a flexible, flexuous, lax, successively several-flowered raceme up to 5 cm long including the 1-2 cm long, filiform peduncle; floral bracts 1 mm long; pedicels 2 mm long; ovary 2 mm long; the flowers large, flat, **sepals** yellow, margins smooth**,** dorsal sepal glabrous, broadly triangular-ovate, acute, shortly acuminate, 10 mm long, 9 mm wide, 3-veined, connate to the lateral sepals for 4 mm; lateral sepals yellow, suffused with purple on the inner half, with numerous, red, cellular papillae on the outer half, ovate, oblique, diverging, connate 6 mm, 11 mm long, 10 mm wide together, each 2-veined, the apices subacute, diverging; **petals** rose, cellular-pubescent, transversely bilobed, oblong, 1 mm long, 6 mm wide, the

upper lobe oblong with the end rounded, the lower lobe narrower, oblong, oblique; **lip** white, suffused with purple on the margins, the blades ciliate, ovate, concave, 2 mm long, the apices subacute, the bases rounded, the connectives cuneate, connate to the column near the middle, the appendix in the sinus, small, oblong; **column** arcuate, 2.5 mm long, the anther dorsal, with the anther cap bifurcate, the stigma ventral.

**Norte de Santander:** below Páramo de Jurisdicciones, alt. 2670 m, 10 Nov, 1981, *C. Luer, J. Luer, R. Escobar & D. Portillo 6640* (Holotype: SEL).

The arching, flexuous raceme of *Lepanthes exaltata*, longer than the elliptical leaf below, bears large, flat, yellow flowers with numerous red, papillose cells on the lateral sepals. The sepals are each about ten millimeters long. Only one plant of this showy species was discovered in a remote subpáramo cloud forest in association with numerous other pleurothallids.

## **Lepanthes felis** Luer & R. Escobar, Amer. Orchid Soc. Bull. 52(12): 1264, 1983.

Ety.: From the Latin *felis*, "a cat," for the fancied illusion of the flower.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, slender, 1.5-4.5 cm long, enclosed by 3-8 minutely ciliate lepanthiform sheaths. **Leaf** suberect to spreading, coriaceous, suffused with purple beneath, elliptical, subacute, 18-20 mm long, 10-14 mm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a congested, successively several-flowered raceme up to 5 mm long, borne by a filiform peduncle 15-18 mm long on top of the leaf; floral bracts 1.5 mm long; pedicels 2 mm long; ovary muricate-crested, 2-3.5 mm long; **sepals** yellow, suffused and veined in red-purple, red, or orange, glabrous, margins minutely ciliate-pubescent, the dorsal sepal broadly ovate, concave, 13 mm long, 10 mm wide unexpanded, 3-veined, connate to the lateral sepals for 5 mm, to form a deep sepaline cup, the apex obtuse with a short, slender tail-like apiculum 1.5 mm long, the lateral sepals ovate, oblique, diverging widely, acute, 8.5 mm long, 5 mm wide, connate basally and concave below a transverse fold between the middle and basal thirds, deflexed above the fold, each 2-veined; **petals** emerald green, erect, fleshy, narrowly oblong, obtuse, sulcate, 4 mm long, 1.25 mm wide, with a minute tooth at the base; **lip** dull green, glabrous, transversely bilobed, 1 mm long, 2 mm wide expanded, the lobes ovate, obtuse, embracing the column, the apex transversely rounded, cleft to minutely apiculate, the base connate to the column above the base; **column** 1.5 mm long, the anther and stigma apical.

**Antioquia:** Frontino, Alto de Cuevas, alt. 2050 m, 14 May 1983, *R. Escobar & E. Valencia 2605* (Holotype: SEL); same area, 12 Apr. 1974, *R. Escobar et al. 764* (JAUM); same area, 4 May 1983, *C. Luer, J. Luer, R. Escobar, A. Pridgeon & E. Valencia 9017* (SEL); Mesopotamia, alt. 2050 m, Dec. 1974, *R. Escobar & O. Monsalve s.n.* (JAUM); Frontino, Corregimiento Nutibara, Cuenca Alta del Río Cuevas, alt. 1720 m, 13 July 1986, *D. Sanchez et al. 380* (MEDEL, HUA); Urrao, Parque Nacionál "Las Orquídeas," alt. 2120 m, 25 Feb. 1989, *A. Cogollo, D. Cárdenas & O. Alvarez 4215* (JAUM, MO); same collection, flowered in cultivation at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5187* (MO); north of the pass between Urrao and Carmen de Atrato, alt. 2500 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, et al. 17696* (MO); "Medellín," *G. Schmidtchen s.n.* (W); "Medellín," *Patin s.n.* (W).

**Chocó:** San José del Palmar, Cerro Torrá, alt. 1940-2450 m, 30 Aug. 1988, *P. Silverstone-Sopkin et al. 4903* (CUVC, MO); between San José del Palmar and Valle, alt. 2100 m, 22 Feb. 1992, *A. de Wilde 3867* (MO).

**Valle del Cauca:** El Cairo, Cerro del Inglés, Serranía de los Paraguas, alt. 2260 m, 5 Jan. 1987, *P. Silverstone-Sopkin et al. 2949* (CUVC, MO).

The Reichenbach herbarium at W contains a beautiful watercolor painting of this species attributed to Schmidtchen, who collected in the vicinity of Medellín around 1880. Also present are two specimens attributed to Patin, who lived in Medellín and dealt in orchids. It is strange that nothing was done with these collections; certainly both Kränzlin and Schlechter saw them.

The species was rediscovered by Rodrigo Escobar and his companions in 1974. Plants soon were disseminated among enthusiasts of *Lepanthes* and became affectionately known as "the cat" because of the two green eyes peering from the interior of the flower.

*Lepanthes felis* is endemic in the Western Cordillera of Colombia where it is uncommon but widely distributed. The size of the plants and flowers and the color of the flowers vary considerably. Vegetatively, *L. felis* is not remarkably different from many species of *Lepanthes* subgen. *Marsipanthes*. The large flower is borne near or beyond the tip of the leaf. The concave sepals are connate into a deep sepaline cup from which the tips of the oblong, green petals are visible.

**Lepanthes ferax** Luer & R. Escobar, Orquideología 18(1): 48, 1991.

Ety.: From the Latin *ferax*, "fertile," referring to the numerous capsules produced by the flowers.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls more or less stout, erect, 2-8 cm long, enclosed by 5-8 close, microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple beneath, narrowly ovate, acute, 2-4 cm long, 0.5-1 cm wide, cuneate below into a petiole 2 mm long. **Inflorescence** a loose, successively few-flowered raceme 10-16 mm long including the filiform peduncle; floral bracts 0.75-1.25 mm long; pedicels 0.75 mm long; ovary 0.75 mm long, alate, the wings irregularly dentate; **sepals** light yellow-green, suffused with purple, glabrous, carinate-spiculate, margins denticulate, the dorsal sepal broadly ovate, concave, obtuse, shortly acuminate, 2.5 mm long, 1.8 mm wide, 3-veined, connate to the lateral sepals for 0.3 mm, the lateral sepals ovate, oblique, diverging, acute, shortly acuminate, 2.5 mm long, 1 mm wide, connate 0.5 mm, 1-veined; **petals** orange to yellow, microscopically pubescent, transversely bilobed, 0.5 mm long, 1.3 mm wide, the upper lobe oblong, obtuse, the lower lobe smaller, triangular, oblique, narrowly obtuse; **lip** yellow to purple, the blades pubescent, narrowly oblong, 1.25 mm long, the apices acute, the bases rounded, the connectives broadly cuneate, the broad body connate to the column above the base, the sinus obtuse, densely pubescent, obscuring the microscopic appendix-lobule; **column** 1.25 mm long, the anther dorsal, the stigma apical.

**Cundinamarca:** epiphytic in cloud forest above Gutierrez south of Bogotá, alt. 2700 m, 19 May 1984, *C. Luer, J. Luer & R. Escobar 10376* (Holotype: MO).

**Antioquia:** Mun. Jardín, Alto de Ventanas, alt. 2800 m, 25 May 1983, *R. Escobar, L. Posada, J. Posada, et al. 2697* (JAUM), C. Luer illustr. 9112; same collection, flowered in cultivation at Colombian borquídeas, 22 Jan. 1984, *R. Escobar 3208* (JAUM); Mun. Yarumal, epiphytic in cloud forest, Ratón Pelado, alt. 2650 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10054* (MO); Urrao, corregimiento "encarnacion," sitio "El Río," alt. 3120 m, 7 Apr. 1989, *R. Callejas et al. 7765* (HUA).

**Chocó:** epiphytic in cloud forest south of the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer et al. 17681* (MO).

This species is similar to *Lepanthes monoptera* Lindl., which also produces short, few-flowered racemes that frequently form capsules. The flowers of *L. ferax* are much smaller, and the appendix is reduced to a microscopic lobule buried in the pubescence at the sinus of the lip. Apparently most of the plants of *L. ferax* are cleistogamous. Only very rarely did Rodrigo Escobar succeed in finding a flower open for photography.

**Lepanthes fibulifera** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(1): 29, 1984.

Ety.: From the Latin *fibula,* "a buckle," and *-fir,* "bearing," referring to the appearance of the appendix.

**Plant** small, epiphytic, caespitose, weak; roots slender. Ramicauls slender, suberect to transverse, 2-6 cm long, enclosed by 5-8 close, minutely scabrous lepanthiform sheaths. **Leaf** more or less spreading, coriaceous, suffused with purple on one or both sides, ovate, acute, acuminate, 18-48 mm long, 9-16 mm wide, the base rounded or cuneate into a petiole 1 mm long. **Inflorescence** an extremely congested raceme of successive flowers, up to 6 mm long, borne on top of the leaf by a filiform peduncle 3-17 mm long; floral bracts 1 mm long; pedicels 2-2.5 mm long; ovary 2 mm long; **sepals** dull yellow to dull rose, glabrous, ovate, obtuse, margins cellular-ciliate, the dorsal sepal 3.25 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.6 mm, the lateral sepals oblique, diverging, connate to above the middle, 2.6 mm long, 3.5 mm wide together, each 2-veined; **petals** green, sometimes suffused with rose, minutely pubescent, transversely oblong, 1.5 mm long, 4 mm wide, with

a minute lobule on the mid-outer margin, the upper lobe truncate, subquadrate, the lower lobe ovate, all the angles rounded; **lip** rose, the blades thin, flat, lunate, 1.6 mm long, minutely ciliate, the connectives narrow, forming a thick body attached to the base of the column, the appendix broadly strap-shaped, concave, bi-apiculate, hinged from beneath the body; **column** concealed by the blades of the lip, 1 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Frontino, Alto de Cuevas, alt. 2050 m, 14 May 1983, *R. Escobar & E. Valencia 2604* (Holotype: SEL), C. Luer illustr. 9098; Alto de Musinga, alt. 1900 m, 11 April 1974, *R. Escobar et al. 1199* (JAUM); Mun. Yarumal, Quebrada El Oro, alt. 1730 m, 21 May 1983, *R. Escobar & E. Valencia 2649* (SEL); Yarumal, epiphytic in forest remnant along the road to Briceño, Quebrada El Oro, alt. 1850 m, 16 March 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14186* (MO).

This species resembles many others similar to *Lepanthes mucronata*, with a relatively small, frail habit; ovate, acuminate leaves; obtuse, tailless sepals; proportionally large petals; and a lip with thin, well-developed blades. It is distinguished by its appendix, a straplike organ hinged beneath the thickened sinus of the lip. It is shallowly concave with pubescent margins, and the apex is minutely bidentate. The whole organ looks like a belt-buckle.

## **Lepanthes filamentosa** Luer & Hirtz, Novon 3: 448, 1993.

Ety.: From the Latin *filamentosus*, "filamentous," referring to the long-acuminate sepals and lobes of the petals.

**Plant** minute, epiphytic, caespitose; roots comparatively thick. Ramicauls erect, slender, 4-10 mm long, enclosed by 3-5 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, 3-7 mm long, 2.5-5 mm wide, the apex obtuse to subacute, prominently apiculate, the margins microscopically cellular-ciliate, the base cuneate into a petiole up to 1 mm long. **Inflorescence** a subdense, distichous, successively several-flowered raceme up to 7 mm long, borne by a filiform peduncle 10-18 mm long; floral bracts 1-1.5 mm long, muriculate; pedicels 1.5-2.5 mm long; ovary 1 mm long, with the ribs cellular-papular; **sepals** yellow to white suffused with purple centrally, carinate, glabrous, ovate, margins smooth, the acute apices extremely long-attenuate, the dorsal sepal 10-17 mm long, 1.25-1.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging widely, 10-16 mm long, 1-1.25 mm wide, connate 0.5 mm, 1-veined; **petals** yellow, bifurcate 1 mm above the base, filiform, 3-5.5 mm long; **lip** yellow, glabrous, bilobed, the lobes auricular, 1.25 mm long, with the half above the column thickened to form an ill-defined lamina, the half below the middle falcate with broadly rounded, incurved, overlapping apices, without an appendix, the body connate to the base of the column; **column** 1 mm long, the anther and the stigma apical.

**Valle del Cauca:** El Queremal, collected by Cristobal Papiermik in September, 2008, flowered in cultivation at Colomborquídeas, 14-16 June 2009, *L. Thoerle 141* (MO).

Also Ecuador **(**Esmeraldas, Holotype, *Luer et al. 12378*: MO).

Mature plants of this species are some of the smallest known in the genus. The flowers are also small, but the lengths of the exceedingly long, filamentous tails of the sepals and the filamentous lobes of the petals create dimensions comparable to flowers of species with much larger plants. Until Papiermik's recent collection in Valle del Cauca, it was considered to be endemic to Ecuador, where it has been found relatively frequently in the wet northwestern forests. It is nevertheless difficult to find, for it grows buried in thick layers of moss on small branches of trees, often with only the small, spiderlike flowers visible. By following the peduncle for two or three centimeters, one can find the hidden plant.

*Lepanthes calimae* shares a similar tiny size and spindly, pale flowers with bifurcated petals. *Lepanthes calimae* is distinguished by its two-veined lateral sepals and a lip with narrowly ovate, long-attenuate lobes.

## **Lepanthes focalis** Luer, Phytologia 54(5): 343, 1983.

Ety.: From the Latin *focale*, "a muffler to keep the neck warm," referring to the lip.

**Plant** medium in size, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 4-15 cm long, enclosed by 7-13 ciliated lepanthiform sheaths. **Leaf** suberect to spreading, thinly coriaceous, veined, oblong-ovate, 3.5-6.5 cm long, 1.6-3.2 cm wide, the rounded apex abruptly constricted into a narrow acumen ca. 1 cm long, the rounded base abruptly contracted into a twisted petiole 2-4 mm long. **Inflorescence** a successively flowered, markedly congested, distichous raceme up to 12 mm long, borne beneath the leaf by a slender peduncle up to 20 mm long; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 1.25 mm long; **sepals** yellow-white, lightly suffused with rose centrally, glabrous, margins smooth, the dorsal sepal ovate, acuminate, acute, 7 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, obtuse with shortly acuminate, diverging apices, 7 mm long, 3 mm wide, connate 3 mm, 2-veined; **petals** light yellow with or without purple edges, cellular-glandular, narrowly transversely oblong, bilobed, 1.25 mm long, 5 mm wide, the upper lobe ovate, obtuse, the lower lobe longer, narrowly linear, obtuse; **lip** purple or yellow, fleshy, pubescent, transversely cordate, 1.5 mm long, 1.75 mm wide expanded, the broadly rounded apex lightly retuse with a tiny tuft of hairs, the rounded, concave basal lobes embracing the column, the base connate to the column near the middle; **column** cylindrical, 1.75 mm long, the anther apical, the stigma ventral.

**Risaralda:** along new road to TV antenna south of Pueblo Rico, alt. 2400 m, 14 May 1993, *C. Luer et al 16830* (MO).

Also Ecuador (Loja, Holotype, *Luer et al. 5524*: SEL; Azuay; Morona-Santiago; Zamora-Chinchipe).

This species occurs locally from central Colombia to southernmost Ecuador. It is identified by thin, oblong, obtuse leaves with a prominent apical acumen; acuminate sepals with smooth margins and the tips of the laterals diverging; narrowly oblong petals with the lower lobe much longer than the upper lobe; and a thick, pubescent, broadly cordate lip without blades, surrounding the column like a muffler. *Lepanthes dunstervilleorum* is similarly stout vegetatively with pastel flowers, but is distinguished by flowers with pubescent petals with the upper lobe longer than the lower lobe and a lip with convex blades.

## **Lepanthes fonnegrae** Luer & R. Escobar, Orquideología 19(1): 25, 1993.

Ety.: Named in honor of the late Sra. Ana Fonnegra de Isaza, in whose collection this species was discovered.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 12-15 mm long, enclosed by 4 microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, obovate, obtuse to rounded at the apex, 10-14 mm long, 7-8 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a loose, successively few-flowered raceme, up to 10 or more mm long, borne beyond the leaf by a slender peduncle ca. 15 mm long, the flowers very large for the plant, all parts orange; floral bracts 1.5 mm long; pedicels 3.5-4.5 mm long; ovary sulcate, 1 mm long; **sepals** glabrous, flat, margins minutely irregular, the dorsal sepal transversely ovate, obtuse, 7 mm long, 7 mm wide, 3-veined, connate to the lateral sepals for 3 mm, caudate with the apex contracted into a slender cauda 3 mm long, the lateral sepals ovate, oblique, long-caudate, diverging, connate 7 mm into an ovate, bifid synsepal, 10 mm long, 9.5 mm wide, each 2-veined, the apices subacute, contracted into slender caudae 4.5 mm long; **petals** microscopically pubescent, transversely bilobed, 0.75 mm long, 5.5 mm wide, the upper lobe narrowly oblong, obliquely truncate, the lower lobe equally long, narrowly triangular, acute; **lip** bilaminate, the blades ovate, flat, glabrous, 1.75 mm long, with the bases rounded, the apices rounded, ciliate, the connectives broadly cuneate, the body connate to the base of the column, with the appendix hinged in the sinus, the appendix obovoid, concave, with a terminal bilobed gland; **column** 1.5 mm long, with the anther dorsal and the stigma ventral.

**Antioquia:** Mun. Carolina, alt. 2500 m, collected by E. Valencia, May 1989, flowered in cultivation at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5181* (Holotype: MO), C. Luer illustr. 16568.

In 1972, Rodrigo Escobar discovered and photographed this species in the collection of the late Sra. Ana Fonnegra de Isaza in Tenche, municipality of Carolina. The plant eventually disappeared, and was not collected again until Valencia's rediscovery of the species in 1989.

*Lepanthes fonnegrae* is remarkable for the great size of the flower, which is larger than the leaves of the plant. The large, flat, orange flower is held above the small, obovate leaves with rounded apices. The sepals are irregular along the margins, and the apices are contracted into slender tails. The bilobed petals are narrowly oblong. The ovate blades of the lip are smooth, flat, and erect. The appendix is intricately sculpted with a bilobed gland at the apex. Another tiny Colombian species bearing a similar showy flower, *L. beatrizae*, has three-veined lateral sepals; much smaller, oblong petals; and a cristate-spiculate ovary.

**Lepanthes forceps** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(2): 161, 1984.

Ety.: From the Latin *forceps*, "pincers," referring to the shape of the lip.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-3.5 cm long, enclosed by 4-6 close, minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple beneath, broadly ovate to cordate, 10-21 mm long, 10-21 mm wide, the apex obtuse to rounded, the base broadly cuneate to cordate, abruptly contracted into a petiole 1 mm long. **Inflorescence** a dense, distichous, successively flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 4-5 mm long; floral bracts 0.5 mm long; pedicels 1-1.5 mm long; ovary 1 mm long; **sepals** yellow, suffused with red centrally, glabrous, ovate, acute, margins smooth, the dorsal sepal 3.75 mm long, 2 mm wide, 3-veined, connate 0.5 mm to the lateral sepals, the lateral sepals diverging, connate 1.25 mm, 3.25 mm long, 2.5 mm wide together, each 2-veined; **petals** minutely pubescent, transversely oblong, 0.75 mm long, 4.75 mm wide, the upper lobe purple, oblong, obtuse, the lower lobe yellow, narrowly triangular-subfalcate, acute; **lip** red-purple, minutely pubescent, the blades oblong, 1.5 mm long, the bases rounded, the apices broadly falcate, incurved and overlapped beneath the apex of the column, the connectives narrowly oblique, the body connate by a short, narrow claw to the column above the base, the appendix ovoid, pubescent, pedunculate, on the external surface of the body at the base; **column** slender, 1.5 mm long, the anther apical, the stigma subapical.

**Norte de Santander:** epiphytic in forest beside the river between Abrego and Sardinata, alt. 1730 m, 12 Nov. 1981, *C. Luer, J. Luer, R. Escobar & D. Portillo 6680* (Holotype: SEL).

**Antioquia:** Río Negro, Río Piedras, alt. 2150 m, 29 Apr. 1983, *C. Luer, J. Luer & R. Escobar 8869* (SEL).

**Meta:** Llanos Orientalis, alt. 800 m, collected by H. Angarita, December 1992, flowered in cultivation at Colomborquídeas, 16-19 May 1993, *C. Luer 16874* (MO).

This small species is characterized by the broad, obtuse to rounded, purple leaves with short, distichous racemes. The sepals are acute, and each is shorter than the width of the transversely oblong petals. The apices of the blades of the lip are broadly falcate beneath the column, and the pubescent, ovoid appendix is external at the base of the lip. *Lepanthes cordata* also has a cordate leaf as broad as it is long, and flowers with petals that are wider than the length of a sepal, but it is distinguished by sepals that are proportionally wider and petals with an acute upper lobe.

**Lepanthes foreroi** P. Ortiz, O. Pérez & E. Sánchez, Orquideología 26(2): 137, 2009.

Ety.: Named in honor of Luis Eduardo Forero Pinto, botanist, professor, and curator of the José Cuatrecasas Arumi Herbarium (VALLE).

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, pendent, ca. 4 cm long, enclosed by 5-7 lepanthiform sheaths with ciliate ribs and dilated ostia. **Leaf** gray-green, pendent, coriaceous, ovate, acute, apiculate, 4-4.5 cm long, 1.4-1.6 cm wide, diffusely spiculate-pubescent with

margins densely ciliate, rounded at the base, sessile. **Inflorescence** 1 or 2 simultaneous, pendent, with congested, successively several- to many-flowered racemes 1-1.5 cm long, borne by slender peduncles 0.5-2 mm long, floral bracts probably ca. 1.5 mm long; pedicels 1-2 mm long; ovary probably ca. 1 mm long; **sepals** greenish, suffused with purple-brown, glabrous, margins coarsely ciliate, the dorsal sepal broadly ovate-triangular, acute, ca. 4 mm long, 4.5 mm wide, 3-veined, the tip acuminate into an erect cauda ca. 4 mm long, connate basally to the lateral sepals, the lateral sepals transversely subovate, oblique, connate ca. 2 mm, ca. 2.5 mm long, 5 mm wide together, each probably 2-veined, the apices in apposition, obtusely oblique, abruptly contracted into slender, descending, curved caudae ca. 5 mm long; **petals** glabrous, transversely bilobed, ca. 0.5 mm long, ca. 5 mm wide, the lobes subequal, oblong, round at the ends, the lower lobe slightly narrower; **lip** glabrous, bilaminate, the blades oblong, round at the ends, ca. 3 mm long, the connectives cuneate, the body connate to the base of the column, with the appendix short; **column** terete, ca. 2 mm long.

**Valle del Cauca:** Yotoco, Alto de Minas, Farm "Hato Viejo," alt. 1860 m, 17 Oct. 2009, *A. Canizales, O. Pérez & E. Sánchez 244* (Holotype: VALLE), C. Luer illustr. 21665; same location, September 2009, *P. Ortiz, O. Pérez & E. Sánchez 1439* (Paratype: HPUJ).

This small species, known only from relic subandean forest in southwestern Colombia, is characterized by pendent, ovate leaves that are densely ciliate and pubescent-spiculate. One or two pendent, congested racemes are borne on the top surface of the leaf by peduncles of unequal length. The sepals of the greenish purple-brown flowers are caudate, with the lateral sepals being longer and more or less curved with approximate apices. The lobes of the petals are oblong. The narrowly oblong blades of the lip partially overlie the column, and the sinus is obtuse with a very small appendix.

*Lepanthes tomentosa* Luer shares a pubescent leaf with one to several shorter inflorescences borne on top, bearing a succession of flowers with denticulate sepals with long-acuminate tails. *Lepanthes foreroi* is distinguished by the lateral sepals, the blades connate into a lamina wider than it is long, abruptly contracted into much longer tails that arch outwards and then curve to the inside, much like the pincers of the common earwig (*Forficula auricularia* L.).

The modified description and illustration included here are based on the published description and illustration by P. Ortiz and from the photograph on the cover of the journal.

**Lepanthes foveata** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(10): 1044, 1984.

Ety.: From the Latin *foveatus,* "with a pit," referring to the cavity of the body of the lip.

**Plant** small to medium in size, delicate, epiphytic, caespitose; roots slender. Ramicauls slender, weak, erect to horizontal, 3-12 cm long, enclosed by 7-13 close, minutely ciliate lepanthiform sheaths. **Leaf** erect to spreading, coriaceous, ovate, acute, acuminate, 25-44 mm long, 9-12 mm wide, the base rounded or cuneate into a petiole 2 mm long. **Inflorescence** a congested, successively flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 7-18 mm long; floral bracts 1 mm long; pedicels 1.2-2 mm long; ovary 1.5 mm long; **sepals** translucent yellow-orange or rose-brown, glabrous, ovate, acute, margins smooth, the dorsal sepal 3.5 mm long, 2.75 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals diverging, connate 1.5 mm, 3.5 mm long, 3.25 mm wide together, each 2-veined; **petals** yellow-brown or red-orange, minutely pubescent, transversely bilobed, 0.75 mm long, 3.75 mm wide, with a minute lobule on the outer margin near the middle, the upper lobe oblong-ovate, obtuse, the lower lobe narrowly triangular, acute; **lip** yellow-brown or red-orange, pubescent, the blades obovate-oblong with rounded ends, 1.6 mm long, shallowly concave, the connectives cuneate, narrow, short, from below the middle of the blades, the narrow body connate to the base of the column, the sinus convex with a well-developed cavity between the column and the margin, the appendix concave, oblong, pubescent, hinged from below the margin of the sinus; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** epiphytic in cloud forest, Alto de Santa Inéz, alt. 2100 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10308* (Holotype: MO; Isotype: SEL); same collection,

flowered in cultivation at Colomborquídeas, El Retiro, 6 June 1984, *R. Escobar 3257* (JAUM, COL); same area, alt. 2050 m, 23 May 1982, *C. Luer, R. Escobar & D. Portillo 7950* (SEL).

Many species related to *Lepanthes mucronata* share a weak habit, small flowers with ovate sepals, and petals with a minute marginal apiculum between the lobes. From most of them, *L. foveata* is distinguished by its lip with pubescent blades and a distinct pit in the sinus below the ligulate appendix. The sepals of the similar *L. dryades* are denticulate; the similar narrowly triangular lower lobes of the petals are longer than the upper lobes; and the blades of the lip are supported by broadly cuneate connectives forming a broad body with an equally well developed cavity.

**Lepanthes furcata** Luer & R. Escobar, Orquideología 19(1): 27, 1993.

Ety.: From the Latin *furcatus*, "forked," referring to the bifid stigma.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, weak, erect, 12-15 cm long, enclosed by 16-18 lepanthiform sheaths with microscopically ciliate ostia. **Leaf** more or less decurved from a bending of the apex of the ramicaul, suffused with purple, thinly coriaceous, elliptical with the apex acute, long-acuminate, 6-7.5 cm long, 2.5-3.5 cm wide, the base broadly cuneate into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively few-flowered raceme, up to ca. 5 mm long, borne on top of the leaf by a slender peduncle 10-25 mm long; floral bracts acute, 1.5 mm long; pedicels 2-2.5 mm long; ovary 3 mm long; **sepals** yellow, suffused with brown, flat, glabrous, margins smooth, the dorsal sepal triangular-ovate, obtuse, 7 mm long, 6 mm wide, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals ovate, oblique, diverging, 7 mm long, 3.5 mm wide, 2-veined, connate 2 mm, the apices obtuse, shortly acuminate with diverging tips; **petals** microscopically pubescent, transversely bilobed, 1.5 mm long, 5.5 mm wide, the upper lobe green, oblong, truncate, the lower lobe orange-brown, sigmoid, with the apex narrowly obtuse; **lip** orange, bilaminate, 2 mm long, the blades oblong, thin, adherent medially over the column, with obtuse apices, and with the margins of the bases shortly uncinate, the connectives cuneate, the body narrow, connate to the base of the column, the appendix pubescent, globose, with a minute, uncinate apical gland, **column** with the shaft less than 1 mm long, the anther dorsal, the stigma ventral, deeply bifurcate with lobes protruding beyond the column and blades of the lip.

**Chocó:** Mun. San José del Palmar, Galápagos, alt. 2000 m, collected by E. Valencia, Jan. 1992, flowered in cultivation at Colomborquídeas, 21 Dec. 1992, *R. Escobar 5055* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16576.

**Valle del Cauca:** Alto de Los Galápagos, at the pass between Valle del Cauca and Chocó, alt. 2050 m, 13 May 1993, *C. Luer et al. 16809* (MO).

This species is distinguished by the purplish leaf with a long-attenuated apex, more or less held downward by the drooping end of the slender ramicaul. The short, congested raceme with a relatively large flower lies on top of the leaf. The glabrous sepals are broadly ovate. The lobes of the petals are markedly dissimilar: the upper lobe is green, oblong, and truncate; the lower lobe is orange-brown and sigmoid in shape. The blades of the lip are thin and adherent medially, with a short, uncinate process curving forward from the margins of both bases. A minute, recurved, loop-like gland protrudes from a long-pubescent, globose appendix. The shaft of the column is short with the swollen anther and stigma twice as long. The distinctive stigma is deeply forked, with the arms protruding well beyond the tips of the blades of the lip.

**Lepanthes gargantua** Rchb. f., Xenia Orch. 1: 150, 1856.

Ety.: Named for the monstrous Gargantua in allusion to the size of the species.

Syn.: *Lepanthes pachyrhiza* Luer & Hirtz, Lindleyana 2: 138, 1987.

Ety.: From the Greek *pachyrhiza*, "thick root," referring to the thick, coarse roots of the species.

**Plant** large, robust, epiphytic, caespitose; roots thick, coarse. Ramicauls erect, stout, 10-58 cm long, enclosed by 11-16 microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, oblong-ovate, subacute to obtuse, acuminate, 6-15 cm long, 3.5-8 cm wide, the rounded base contracted into a petiole 0.5-1 cm long. **Inflorescence** racemose, 1- to several simultaneous, congested, distichous, successively many-flowered racemes up to 6 cm long, borne behind the leaf by slender peduncles 2-3 cm long; floral bracts 1.5-2 mm long; pedicels 2-3 mm long; ovary 10-16 mm long; **sepals** yellow-orange, glabrous, broadly ovate, obtuse, with short, thick caudae or apiculae, margins smooth, the dorsal sepal 5.5-7 mm long, 5.5-8 mm wide, 3-veined, connate to the lateral sepals for 1.5-2 mm, the lateral sepals oblique, diverging, 5-7 mm long, 3-4.5 mm wide, 2-veined, connate 1.75-2 mm; **petals** orange with purple margins, microscopically pubescent, transversely bilobed, 1-2 mm long, 4-6 mm wide, with an obtuse angle between the lobes on the outer margin, the upper lobe oblong, oblique, obtuse, the lower lobe smaller, narrowly triangular; **lip** purple, bilaminate, the blades oblong with the ends rounded, concave near the middle, minutely ciliate, 1.8-2.2 mm long, the connectives short, cuneate, forming a broad body, connate to the base of the column, the sinus obtuse with a small, triangular, minutely ciliate appendix; **column** 1.5-2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Medellín, terrestrial in subpáramo vegetation along road to Cerro del Padre Amaya, 10 km from Medellín-Santa Fé de Antioquia road, alt. 2970 m, 15 Sep. 1987, *J. L. Zarucchi & A. E. Brant 5326* (MO); Sonsón, on road to Nariño, alt. 2600-2700 m, 13 Nov. 1988, *McPherson 13077* (HUA, MO); epiphytic in forest remnant about 10 km north of Santa Rosa de Osa, alt. 2650 m, 14 March 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14135* (MO).

Also Ecuador (Pichincha, Holotype of *L. gargantua*, *W. Jameson 110*: W; Carchi; Imbabura, holotype of *L. pachyrhiza*, *Hirtz 1916*: MO; Cotopaxi; Napo; Tungurahua; Cañar; Azuay; Morona-Santiago; Loja; Zamora-Chinchipe), Peru (Amazonas).

This robust species is relatively frequent and widely distributed in the Andes from Colombia to Peru. *Lepanthes gargantua* can be one of the largest members of the genus, but many plants attain only half the apparent maximum size. Thick, coarse roots support stout ramicauls that sometimes reach half a meter in length. The leaves vary in size with the strength of the ramicaul, but large leaves 15 centimeters long are not rare. Yellow-orange, flat flowers, sometimes in profusion, are produced on congested racemes behind the leaf. The sepals are obtuse with short tails. The bilobed petals and bilaminate lip are not remarkably different from many others. The vegetatively smaller *Lepanthes macrantha* Garay produces flowers that are similar but slightly larger, with petals with an obliquely truncate upper lobe and an apiculum between the lobes.

## **Lepanthes gelata** Luer & R. Escobar, Orquideología 20(3): 295, 1997.

Ety.: From the Latin *gelatus*, "congealed," in reference to the gelatinous appearance of the body of the lip.

**Plant** small, weak, epiphytic, caespitose; roots slender. Ramicauls very slender, suberect to erect, 4-12 cm long, enclosed by 10-18 microscopically ciliate lepanthiform sheaths. **Leaf** suberect to spreading, thin, ovate, acute to subacute, with the linear acumen about as long as the blade, 30-37 mm long, 12-18 mm wide, the base rounded or broadly cuneate, contracted into a petiole 1-1.5 mm long. **Inflorescence** a very congested, subsecund, successively many-flowered raceme, up to 5 mm long, borne on top of the leaf by a filiform peduncle 3-9 mm long; floral bracts 0.5 mm long; pedicels overlapping, 0.75-1 mm long; ovary 1.5 mm long; **sepals** yellow, glabrous, margins minutely denticulate, the dorsal sepal triangular, acute, 4 mm long, 2.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals connate 2 mm into an ovate, bifid synsepal, 4 mm long, 3 mm wide, each 2-veined, with the apices acute; **petals** orange, suffused with red, minutely pubescent, transversely bilobed, 1 mm long, 6 mm wide, 1-veined, the lobes opposite, narrowly triangular, acuminate, the lower lobe smaller; **lip** purple with darker purple edges, bilaminate, the blades microscopically pubescent, flat, elliptical-oblong, with rounded ends, 1.8 mm long, the connectives broadly cuneate, the body broad with a deep mentum externally, with a flat, membranous surface within covering the interior of the mentum which is filled with a transparent gelatinous substance, connate to the base of the column, the sinus transverse with a broadly triangular, ciliate appendix; **column** 1.5 mm long, with the anther dorsal and the stigma ventral.

**Risaralda:** above Pueblo Rico, epiphytic in cloud forest below the TV antenna, alt. 2400 m, 14 May 1993, *C. Luer, J. Luer, A. de Wilde & J. Gómez 16837* (Holotype: MO).

This species, known only from one area in the Western Cordillera, is a twig epiphyte in a wet forest at a moderately high altitude. The largest plants consist of no more than two or three very thin, weak ramicauls bearing a small, spreading, ovate leaf with an attenuate apex about as long as the blade. The long-petaled flower is borne upon the leaf. Most unusual is the conspicuous mentum of the body of the lip. It seems to be filled with a transparent, gelatinous material, which is covered by a thin, flat membrane. The triangular, ciliate appendix originates from the sinus that is contiguous with the anterior margin of the membrane.

**Lepanthes gemina** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(3): 314-316, 1985.

Ety.: From the Latin *geminus*, "a twin," referring to the similarity of the species to *L. steyermarkii* Foldats.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-28 cm tall, enclosed by 9-15 ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, reticulate-veined beneath, elliptical-ovate, acute, acuminate, 6-11 cm long, 2.5-4.5 cm wide, the rounded base contracted into a petiole 3-4 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 25 mm long, borne behind the leaf by a filiform peduncle 18-30 mm long; floral bracts 2 mm long; pedicels 1.5 mm long; ovary 2 mm long; **sepals** light yellow, glabrous, lightly carinate, ovate, acute, margins smooth, 7 mm long, 3.5 mm wide, the dorsal sepal 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals diverging, 2-veined, connate 1 mm; **petals** yellow, suffused with purple medially, microscopically pubescent, transversely bilobed, 1.75 mm long, 3.75 mm wide, the upper lobe obliquely quadrate, truncate, the lower lobe falcate, incurved, acute; **lip** yellow with red margins, the blades microscopically pubescent, more or less ovate and concave with rounded ends, 1.8 mm long, the inner margins erect and in apposition above the column, the connectives broad, obliquely cuneate, the body connate to the column above the base, the sinus occupied by a broadly triangular, membranous appendix, appressed to the stigma in the natural position; **column** rose, 1 mm long with a rostellar projection 1 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** Toledo, epiphytic in cloud forest, Alto de Santa Inéz, alt. 2150 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10340* (Holotype: JAUM; Isotype: MO), *10316* (MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, 5 July 1984, *R. Escobar 3279* (COL, JAUM).

This large species is very similar to *Lepanthes steyermarkii*, differing with elevated, reticulated veins on the under surface of the leaves; the falcate rather than oblong lower lobes of the petals; and the concave blades of the lip, which lack the conspicuous longitudinal carinae and are borne by short rather than elongated connectives. The column of both species is short with an elongated rostellar projection with a membranous appendix appressed to the underlying stigma. *Lepanthes steyermarkii* has not been found in the same forest, but it has been found farther north, very near the Venezuelan border.

**Lepanthes georgii** Luer, Orquideología 19(2): 96, 1994.

Ety.: Named in honor of Jorge López, one of the collectors and gardeners at Colomborquídeas.

Syn.: [≡ *Lepanthes bifurcata* Luer & R. Escobar, Orquideología 21(2): 140-142, 1999].
Ety.: From the Latin *bifurcatus*, "bifurcate," in reference to the long-forked petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2.5-6 cm long, enclosed by 7-8 tightly fitting, microscopically scabrous lepanthiform sheaths with acuminate apices. **Leaf** erect, coriaceous, ovate, acute, 2-3.8 cm long, 1-1.5 cm wide, the rounded base contracted into a petiole 1-1.5 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme, up to 7 mm

long, borne behind the leaf by a filiform peduncle 9-11 mm long; floral bracts muriculate, 1 mm long; pedicels 1 mm long; ovary 2.5 mm long; **sepals** acutely reflexed, light yellow-green, glabrous, elliptical, obtuse, margins smooth, the dorsal sepal 4 mm long, 2 mm wide, 3-veined, free from the lateral sepals, the lateral sepals oblique, diverging, 3.5 mm long, 2 mm wide, 2-veined, barely connate at the base; **petals** light yellow-green, glabrous, deeply bilobed, the lobes similar, oblique, diverging, linear, acute, each 4 mm long, 0.5 mm wide, 1-veined, with a central vein and a minute lobule between the lobes; **lip** yellow-green with the center bright purple, transversely, broadly oblong with apex apiculate, 1.25 mm long, 3 mm wide, with erect, obtuse, basal angles, the base connate to the base of the column; **column** bright purple, semiterete, 3 mm long, with the anther apical and the stigma ventral.

**Antioquia:** El Retiro, Hda. Normandia above Colomborquídeas, alt. 2400 m, collected by J. López, Jan. 1993, flowered in cultivation at Colomborquídeas, 5 May 1993, *C. Luer 16639* (Holotype: MO; Isotype: JAUM).

*Lepanthes georgii* is similar to *L. culex*, which is also found in the Central Cordillera, but farther north in the municipality of Yarumal. The sepals of both species are of the same size and acutely reflexed. The petals of both are deeply bifurcate. The apex of the lip of *L. culex* is rounded and cleft, while that of *L. georgii* is transverse and apiculate.

**Lepanthes giraldoi** Luer, Orquideología 22(1): 37, 2001.

Ety.: Named in honor of Jorge Giraldo G. of the Tuluá Valle Herbarium who collected this species.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect to suberect, 4-10 cm long, enclosed by 7-10 glabrous lepanthiform sheaths with acuminate ostia. **Leaf** suberect, suffused with purple beneath, thinly coriaceous, broadly elliptical to subcircular, obtuse, contracted abruptly into an acute apex, 3.5-4.3 cm long, 1-2 cm wide, the rounded base contracted into a petiole 1-2 mm long. **Inflorescence** a distichous, very congested, successively many-flowered raceme up to 7 mm long, borne behind the leaf by a filiform peduncle 7-10 mm long; floral bracts muriculate, 1 mm long; pedicels 1.75-2 mm long; ovary 2.5 mm long; **sepals** yellow, red toward the base, glabrous, membranous, carinate, reflexed, margins smooth, the dorsal sepal elliptical, obtuse, 2.5 mm long, 2 mm wide, barely connate to the lateral sepals, 3-veined, the lateral sepals elliptical, oblique, diverging, obtuse, 2 mm long, 1.25 mm wide, barely connate basally, 2-veined; **petals** red, microscopically pubescent, transversely bilobed, 0.5 mm long, 2.5 mm wide, lobes diverging ca. 135°, the upper lobe erect, obliquely triangular with an obtuse angle in the inner margin, narrowly rounded at the apex, the lower lobe triangular, acute, shorter; **lip** red, microscopically pubescent, subcordate, with the apex broadly rounded, shortly incised, with the basal lobes embracing the base of the column, 1 mm long, 1 mm wide, connate to the base of the column; **column** stout, 1 mm long, footless, the anther and stigma apical.

**Valle del Cauca:** Finca Zingara, between Cali and Buenaventura, alt. 1900 m, 12 Feb. 1994, *J. Giraldo-Gensini 169* (Holotype: TULV; Isotype: MO).

The flower of this species is similar to that of *Lepanthes viahoënsis* Luer & R. Escobar, but the lateral sepals of *L. viahoënsis* are three-veined rather than two-veined. The greatest differences are vegetative: *L. viahoënsis* is characterized by small, narrowly ovate leaves borne by short ramicauls, while the leaves of *L. giraldoi* are much larger, round, and abruptly contracted into short acute apices. In addition, the very congested raceme of the latter is characterized by significantly longer pedicels and ovaries.

**Lepanthes golondrina** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(7): 718, 1984.

Ety.: From the Spanish *golondrina,* "a swift," referring to the resemblance of the lip to a swallow, or swift, in flight.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 6-8 mm long, enclosed by 3 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, the blade subcircular, up to 9

mm long, 6.5 mm wide, the apex rounded, the base rounded, contracted into a petiole 1 mm long. **Inflorescence** a subdense, distichous, successively flowered raceme up to 15 mm long, borne far beyond the leaf by a filiform peduncle 20-22 mm long; floral bracts 1.5 mm long; pedicels 2 mm long; ovary 2 mm long; **sepals** yellow, suffused with purple above the middle, glabrous, triangular, acute, margins smooth, the dorsal sepal 8 mm long, 4.25 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals diverging, 7.5 mm long, 3 mm wide, 2-veined, connate 1 mm; **petals** yellow-orange, microscopically pubescent, transversely bilobed-oblong, 1 mm long, 2 mm wide, the upper lobe oblong with the end rounded, the lower lobe reduced to a mere rounded end of the upper lobe at the attachment to the base of the column; **lip** purple, deeply 3-lobed, 4 mm long, 5 mm wide expanded, the middle lobe subulate, acute, 3 mm long, the lateral lobes spreading, narrowly triangular, acute, 2.5 mm long, the base with a pair of short, rounded lobules flanking the base of the column; **column** cylindrical, 2.5 mm long, the anther and stigma apical.

**Antioquia:** Mun. Valdivia, Manzanares, alt. 1700 m, Nov. 1974, collected by J. M. Serna, flowered in cultivation by M. & O. Robledo at La Ceja, 11 March 1975, *R. Escobar 1171* (Holotype: JAUM; Isotype: SEL), C. Luer illustr. 9152.

This tiny but large-flowered species was collected once by the late J. M. Serna. Under cultivation by the Robledos, it flowered but did not survive. To our knowledge, another plant of the species has never been seen. *Lepanthes golondrina* is remarkable for its inflorescence longer than the leaf; petals essentially lacking a lower lobe; and a deeply tridentate lip, with the midlobe much longer than the lateral lobes.

**Lepanthes grildrig** Luer & R. Escobar, Orquideología 18(1): 49, 1991.

Ety.: Named for the singular, diminutive Gulliver, called Grildrig by the giants of Brobdingnag.

**Plant** very small, epiphytic, caespitose; roots coarse for the size of the plant. Ramicauls slender, erect, 8-15 mm long, enclosed by 5-6 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple beneath, broadly elliptical, obtuse, 8-11 mm long, 5-6.5 mm wide, the broadly cuneate base contracted into a petiole 1-1.5 mm long. **Inflorescence** a loose, lightly flexuous, successively few-flowered raceme up to 20 mm long including the filiform peduncle 12-15 mm long; floral bracts echinate, 1 mm long; pedicels 1 mm long; ovary lightly cellular-echinate, 1 mm long; **sepals** glabrous, narrowly triangular, long attenuate, acute, acuminate, carinate, margins minutely denticulate, the dorsal sepal light yellow, suffused with red-brown medially, concave, 6.5 mm long, 2 mm wide expanded, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals light yellow, suffused with light red on the outer half, diverging, 7.5 mm long, 1.25 mm wide, 2-veined, connate 2 mm; **petals** red, microscopically pubescent, bilobed-lunate with apices everted, 0.75 mm long, 2.5 mm wide, the lobes triangular, oblique, acute, the upper lobe larger; **lip** bilaminate, the blades yellow, suffused with red at the base, microscopically pubescent, narrowly ovate, 2 mm long, acute at the apices, round at the bases, the connectives very short, cuneate from the base of the blades, the body narrow, connate to the column at the base, the sinus acute with a minute, oblong, ciliate appendix; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** epiphytic in cloud forest, Alto de Santa Inéz, alt. 2200 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10356* (Holotype: MO); same collection, flowered in cultivation at Colomborquídeas, *R. Escobar 3316* (MO), C. Luer illustr. 11533.

Only one plant of this tiny species was discovered in an area exceedingly rich in pleurothallids, especially those in the genus *Lepanthes*. What was left of the plant, after an herbarium specimen had been made, thrived in cultivation at Colomborquídeas. The loose, few-flowered raceme is about twice longer than the little, elliptical leaves. It is distinguished from other species with single-veined lateral sepals and an inflorescence longer than the leaf by narrow, attenuate, minutely denticulate sepals; narrowly crescent-shaped petals; and the narrowly ovate blades of the lip.

**Lepanthes guanacasensis** Luer & R. Escobar, Orquideología 19(2): 97, 1994.

Ety.: Named for Páramo de Guanacas in the department of Cauca, where this species occurs.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, stout, 5-15 cm long, enclosed by 8-11 ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, shortly acuminate, 4.5-6.5 cm long including the petiole 5-6 mm long, the blade 1.7-2.7 cm wide, cuneate below into the petiole. **Inflorescence** 1-2 loose, distichous, flexuous, successively several-flowered racemes up to 23 cm long including the 2-3 cm long peduncle; floral bracts oblique, 2.5 mm long; pedicels 3.5 mm long; ovary 2.5 mm long, the ribs subverrucose; **sepals** light yellow-green, suffused with orange along the veins, glabrous, carinate, margins microscopically ciliate, the dorsal sepal ovate, acute, shortly acuminate, 8 mm long, 4.5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals connate into an ovate synsepal with the apex acute and bifid, 7 mm long, 5 mm wide, each 2-veined; **petals** glabrous (microscopically cellular-pubescent), transversely bilobed, 1 mm long, 4 mm wide, the upper lobe red, oblong, rounded on the end, the lower lobe yellow-orange, smaller, triangular, acute; **lip** red-orange, bilaminate, the blades essentially glabrous, oblong with rounded ends, 2 mm long, the connectives cuneate, the body connate to the base of the column, the sinus broad, with an ovoid appendix minutely bilobulate at the apex; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Cauca:** Mun. Silvia, epiphytic in Páramo de Guanacas northeast of Popayán, alt. 3150 m, 15 Nov. 1982, *C. Luer & R. Escobar 8419* (Holotype: SEL); epiphytic in cloud forest between Totoro and Inza, Páramo de Guanacas, alt. 3150 m, 15 Nov. 1982, *C. Luer & R. Escobar 8428* (SEL); epiphytic in cloud forest, Páramo de las Delicias, alt. 3380 m, 17 Nov. 1982, *C. Luer & R. Escobar 8472* (SEL).

This species is apparently confined to the cool, moist, scrubby forests of southern Colombia. Although vegetatively of moderate size, a gradually lengthening, distantly flowered raceme of relatively large flowers eventually far surpasses the leaf. The flowers are not remarkably distinct. The shortly bifid synsepal is similar to the ovate, shortly acuminate dorsal sepal. The petals and lip are not unusual. The tip of the appendix is bilobulate as often seen in other racemose species. The similar *Lepanthes jardinensis* Luer & R. Escobar, from the Central Cordillera of Colombia, differs with pubescent sepals connate only to the middle; petals with lobes subequal in size and shape; and a lip with wider, pubescent blades.

**Lepanthes gustavoi** Luer & R. Escobar, Orquideología 20(3): 298-299, 1997.

Ety.: Named in honor of Gustavo Arteaga of Medellín, Colombia, co-discoverer of this species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-25 mm long, enclosed by 3-4 closely fitting, microscopically ciliate lepanthiform sheaths with oblique apices. **Leaf** suberect, coriaceous, narrowly elliptical-linear, semiterete, acute, 12-25 mm long, 3-4 mm wide, 1.5 mm deep, the base narrowly cuneate into a petiole ca. 1 mm long. **Inflorescence** a subcongested, distichous, successively several-flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 4-5 mm long; floral bracts spiculate, 1 mm long; pedicels 0.75 mm long; ovary long-spiculate, 1 mm long; **sepals** rose, darker rose toward the apices, glabrous, membranous, carinate-spiculate, widely spread, the dorsal sepal sparsely denticulate, ovate, acute, 4.4 mm long, 2.2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals denticulate, connate 1.5 mm with the acute apices approximate, into an ovate synsepal similar in shape to the dorsal sepal, 4 mm long, 2.75 mm wide, each 2-veined; **petals** finely ciliate-pubescent, transversely bilobed, 0.6 mm long, 2.75 mm wide, the lobes oblong-triangular, acute, the upper lobe orange-brown, longer than the lower lobe, the lower lobe yellow; **lip** orange-brown, bilaminate, the blades microscopically ciliate-pubescent, ovate, with the ends rounded, 1.25 mm long, the connectives broad, oblong, the body connate to the base of the column, the sinus obtuse, with the appendix in two parts, one above the other, the lower part rounded, ciliate, the upper part a minute lobule suspended by a membranous web, with a bilobulate terminal segment; **column** purple, 1.25 mm long, the anther apical and the stigma subapical.

**Chocó:** epiphytic in cloud forest south of the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, B. López, F. López & G. Arteaga 17677* (Holotype: MO).

This small species, apparently endemic in the Western Cordillera of Colombia, is characterized by narrowly linear, semiterete leaves borne by equally long ramicauls with few sheaths. The distichous raceme is much shorter than the leaf. The tiny ovary is densely spiculate. The dorsal sepal and synsepal are equal in size and shape, but the synsepal is denticulate with free apices held in apposition. The transversely oblong petals and the ovate blades of the lip are unremarkable. The appendix consists of two parts. The inferior part is globular and pubescent. Above it is a glabrous lobule supported by a membranous web, with a protruding, bilobular terminal segment. The smaller size and broader leaves readily distinguish it from another terete-leaved Colombian species, *Lepanthes aciculifolia*.

**Lepanthes guttula-sanguinis** Luer & R. Escobar, Orquideología 17(3): 188-192, 1988, as *L. gutula-sanguinis*.

Ety.: From the Latin *guttula sanguinis*, "a little drop of blood," referring to the color of the flower.

**Plant** small to medium in size, epiphytic, caespitose; roots filamentous. Ramicauls slender, erect, 4-10 cm long, enclosed by 4-9 close, microscopically scabrous lepanthiform sheaths. **Leaf** thinly coriaceous, erect to spreading, ovate, 3.5-5 cm long, 1-1.8 cm wide, the apex acute, long-acuminate, the base rounded, abruptly contracted into a petiole 2 mm long. **Inflorescence** a very congested, distichous, successively flowered raceme up to 6 mm long, borne by a filiform peduncle 8-10 mm long behind the leaf; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 2 mm long; **sepals** translucent light yellow, the dorsal with a blood red blotch filling the center, glabrous, ovate, acute, low-carinate, margins smooth, the dorsal sepal 4 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 2-veined, connate 1 mm, 4 mm long, 2.5 mm wide; **petals** dark yellow with the inner margin red, pubescent, transversely bilobed, 1 mm long, 3 mm wide, the lobes oblong, obtuse, subequal; **lip** whitish, suffused with rose, bilamellate, the blades ovate, acute, minutely pubescent, 1.75 mm long, the connectives broad, the body broad, connate to the base of the column, with an obtuse sinus with an intricately sculpted, bisegmented, pubescent appendix; **column** 1.75 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** El Carmen, San Lorenzo, alt. 2600 m, 17 Sept. 1984, *R. Escobar et al. 3460* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 11392.

This pretty little species had been known to Don Rodrigo Escobar for many years as the "drop of blood," but its locality had been lost. While searching to rediscover species he had photographed years ago, he rediscovered "drop of blood" in 1984. Although vegetatively similar to many other species of *Lepanthes*, this species is easily identified by the dark red spot in the center of the light yellow dorsal sepal. The appendix is intricately bi-segmented.

**Lepanthes habenifera** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(4): 371, 1984.

Ety.: From the Latin *habena,* "a strap or thong," and *-fer,* "bearing," referring to the strap-shaped appendix.

**Plant** small, epiphytic, caespitose; roots slender. Secondary stems weak, slender, suberect, 4-8 cm long, enclosed by 8-10 close, minutely scabrous lepanthiform sheaths. **Leaf** suberect to spreading, thinly coriaceous, ovate, 3.5-4 cm long, 1.4-1.6 cm wide, the apex acuminate, acute, the rounded base contracted into a petiole 1-2 mm long. **Inflorescence** a congested, distichous, successively-flowered raceme up to 5 mm long, borne on top of the leaf by a filiform peduncle up to 1 cm long: floral bracts 1 mm long; pedicels 3.5 mm long; ovary 2.5 mm long: **sepals** dark red, glabrous, ovate, acute, carinate, the dorsal sepal with margins smooth, 5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, margins minutely denticulate, 4.5 mm long, 2 mm wide, connate 1.5 mm, 2-veined; **petals** dark red, glabrous or at most cellular-pubescent, transversely bilobed, 1.3 mm long, 4.25 mm wide, with a setiform lobule on the outer margin as a midlobe, the upper lobe oblong, truncate, the lower lobe subfalcate, narrowly obtuse; **lip** dark red, cellular-pubescent, the blades

elliptical, adherent medially over the column, 2.3 mm long, the ends rounded, the connectives broadly cuneate, the body connate to the column below the middle, the appendix in the sinus, strap-shaped, pubescent, 1 mm long, with an apical gland; **column** 1.5 mm long, the anther apical, the stigma ventral.

**Antioquia:** Mun. Frontino, epiphytic in cloud forest, Alto de Cuevas, alt. 2020 m, 3 May 1983, *C. Luer, J. Luer, R. Escobar, A. Pridgeon & E. Valencia 8966* (Holotype: SEL); Urrao, alt. 1500 m, collected by A. Cogollo, 1990, flowered in cultivation at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5190* (MO); epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer et al. 17655* (MO); Yarumal, Entrada del Cedros, alt. 1900 m, flowered in cultivation at Colomborquídeas, 3 June 1995, *C. Luer 17710* (MO).

**Chocó:** San José del Palmar, Cerro del Torrá, cloud forest above heliport, alt. 1920-1950 m, 11 Aug. 1988, *P. Silverstone-Sopkin, J. E. Ramos, L. H. Ramos, N. Paz, R. T. González & A. Henao 4325* (CUCV).

**Risaralda:** Pueblo Rico, alt. 2400 m, 14 May 1993, *C. Luer et al. 16841* (MO).

**Colombia:** without collecting data, flowered in cultivation at Colomborquídeas, 28 Apr. 1983, *C. Luer 8852* (SEL).

*Lepanthes habenifera* grows mixed with several other species of *Lepanthes* including *L. felis*. Among the species similar to *L. mucronata*, it is probably closest to *L. quandi* Luer & R. Escobar. The leaves of *L. quandi* terminate with a linear acumen rather than a tapering, acute apex; the dorsal sepal is denticulate rather than smooth-margined; and the appendix of the lip is considerably smaller. Another similar Colombian species, *L. heteroloba* Luer, R. Escobar & Thoerle, is distinguished by flowers with petals with a lower lobe much smaller than the upper lobe, and a lip with a proportionally larger appendix.

**Lepanthes helgae** Luer & R. Escobar, Orquideología 18(1): 52, 1991.

Ety.: Named in honor of Helga Königer, who with her husband Willibald Königer of München, Germany, discovered this species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2.5-5.5 cm long, enclosed by 6-7 microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 1.5-2.7 cm long, 0.8-1.2 cm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a loose, successively few-flowered raceme 2-5 cm long including the slender peduncle 1.5 mm long; floral bracts 2 mm long; pedicels 2 mm long; ovary 1.5 mm long; **sepals** large, translucent yellow, glabrous, ovate, acute, long-acuminate, long-caudate with slender caudae 6 mm long, margins smooth, the dorsal sepal 15 mm long including the cauda, 5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals oblique, diverging, 17 mm long including the caudae, connate 6 mm, 9 mm wide together, each 2-veined; **petals** red, microscopically pubescent, transversely bilobed, 1 mm long, 4.5 mm wide, the upper lobe suboblong, truncate, the lower lobe narrowly suboblong, obtuse, about as long as the upper lobe; **lip** red, bilaminate, the blades oblong, 2 mm long, the apices rounded, microscopically pubescent, the bases truncate and deeply concave from below and enveloping the connectives, the connectives oblong, mostly concealed within the cucullate base of the blades, the body thick, connate to the base of the column, the appendix thick, broadly triangular, acute, pubescent; **column** slender, 2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Abejorral, vereda La Labor, epiphytic in cloud forest, alt. 2250 m, collected in Aug. 1988 by H. & W. Königer K-165a, flowered in cultivation at Colomborquídeas, 18 Mar. 1989, *C. Luer 14261* (Holotype: MO).

This attractive species, apparently endemic in a small area of the Central Cordillera, is distinguished by large, long-tailed flowers, produced in a loosely flowered raceme eventually exceeding the leaf. Most distinctive, however, is the pair of labellar blades. The apices are rounded and flat, but the bases are deeply concave from beneath, shrouding the connectives.

The most similar Colombian species are *Lepanthes beatrizae* and *L. fonnegrae*. All three are small plants producing large caudate flowers in a loosely flowered raceme. *Lepanthes helgae* is the largest of the three vegetatively. *Lepanthes*

*beatrizae* is distinguished by a cristate-spiculate ovary as well as proportionally minute petals, while the sepals of *L. fonnegrae* are proportionally wider.

**Lepanthes helicocephala** Rchb. f., Xenia Orch. 1: 150 (1856).

Ety.: From the Greek *helicocephale*, "a twisted head," probably referring to the petiole of the leaf with the flowers borne along the back side.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-6 cm long, enclosed by 6-9 glabrous to microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-ovate, obtuse, 2-3 cm long, 1.5-2 cm wide, the base broadly cuneate or rounded, contracted into a petiole 1-1.5 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 10 mm long, borne behind the leaf by a filiform peduncle 7-12 mm long; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 2.5 mm long; **sepals** light yellow-brown, glabrous, carinate, margins smooth, the dorsal sepal narrowly triangular, acute, 5.5 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, acute, apices approximate, 4.75 mm long, 2.25 mm wide, 2-veined, connate at the base; **petals** orange-brown, minutely pubescent, transversely bilobed, 1.4 mm long, 2.6 mm wide, the upper lobe oblong-ovate, rounded at the apex, the lower lobe broad at the base but contracted about midway into a narrow apex; **lip** orange-brown, minutely pubescent, bilaminate, the blades convex, ovoid, the labellar lobe contracted above the middle to a narrow apex without forming a blade, 1.5 mm long, the connectives broadly cuneate, the body broad, connate to the column at the base, the appendix short, ovate, concave, pubescent, incurved, in an association with a stigmatic process; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Colombia:** expected.

Also Surinam (Mariepaston, Holotype, *Kegel 1359*: herbarium of deposition unknown), Guyana (Roche Touatou, Bassin du Sinnamary), Venezuela (Bolivar, Amazonas), Ecuador (Sucumbíos, Napo, Morona-Santiago), Brazil (Acre), Peru (Pasco), and Bolivia (Cochabamba).

This species is widely distributed in lowland Amazonian South America from the Guyanas, through Brazil to Ecuador and Peru. Although it does not seem to have been reported from Colombia, it certainly must occur there. In spite of its extensive range, it remains vegetatively and florally stable. The flowers are borne behind the leaf in a congested raceme. The sepals are acute, with the dorsal sepal narrow and the laterals broad at the base and held in apposition. Very characteristically, the lower lobes of the petals and the apices of the blades of the lip are contracted above the middle into narrow portions, with the apices of the labellar lobes not forming blades.

**Lepanthes hemirhoda** Garay, Canad. J. Bot. 34: 250, 1956.

Ety.: From the Greek *hemirhoda*, "half red," referring to the colors of the flower.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-12 cm long, enclosed by 10-12 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, acuminate, 3.5-5.5 cm long, 1.2-1.5 cm wide, the base cuneate into a petiole 2-3 mm long. Inflorescence 3-6, erect, lax, successively few-flowered racemes to 6 cm long including the peduncle 1.5-2 cm long; floral bracts 2 mm long; pedicels 2 mm long; ovary 1 mm long; **sepals** yellow, glabrous, margins smooth, the dorsal sepal suffused with purple toward the apex, ovate, obtuse, 2.5 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for ca. 0.5 mm, the lateral sepals ovate, oblique, diverging, 2.6 mm long, connate 1.5 mm into a synsepal 2 mm wide, each 1-veined; **petals** orange with purple margins, transversely bilobed, upper lobes overlapping, 0.5 mm long, the upper lobe broadly oblong, subtruncate with rounded angles, 2 mm long, 1 mm wide, the lower lobe narrowly suboblong, obtuse, ca. 0.6 mm long, 0.3 mm wide; **lip** purple, bilaminate, the blades narrowly ovate, acute at the tip, rounded at the base, 1.2 mm long, the connectives narrowly cuneate, the body narrow, connate to above the base of the column, the appendix short, oblong, pubescent; **column** slender, 1 mm long, the anther and stigma apical.

**Norte de Santander:** region del Sarare, between Alto del Oro and Alto de Santa Inéz, alt. 1800-2200 m, 18-21 Oct. 1941, *J. Cuatrecasas, R. E. Schultes & E. Smith 12458* (Holotype: US; Isotype:

COL); Santa Inéz, alt. 2050 m, 23 May 1982, *C. Luer & R. Escobar 7930* (SEL); same area, alt. 2100 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10309* (MO).

This species is endemic in the easternmost part of the Eastern Cordillera, and was one of the species of *Lepanthes* illustrated by the eighteenth century Spanish expedition led by Mutis. It is characterized by a fascicle of several slender, distantly few-flowered racemes, not quite as long as the elliptical, acuminate leaf. The flowers are small and colorful, with the large upper lobes of the petals overlapping and nearly occluding the dorsal sepal. *Lepanthes biglomeris*, also found in the Eastern Cordillera, has petals with similarly large, broad upper lobes and much smaller lower lobes, but the two-veined lateral sepals of *L. biglomeris* are denticulate rather than smooth-margined, and the body of the lip is very broad, with the oblong appendix protruding as far as or slightly farther than the tips of the blades of the lip.

**Lepanthes heptapus** Luer & R. Escobar, Amer. Orchid Soc. Bull. 52(12): 1266, 1983.

Ety.: From the Greek *hepta-,* "seven-," and *-pus,* "-footed," in reference to the seven-footed creature in the center of the flower.

**Plant** small, epiphytic, caespitose; roots fine. Ramicauls slender, erect, 1.54 cm long, enclosed by 5-8 close, microscopically scabrous lepanthiform sheaths. **Leaf** suberect, coriaceous, subconduplicate, lanceolate, 15-20 mm long, 4-5 mm wide, the truncate apex conspicuously tridentate. Inflorescence a congested, secund, successively flowered raceme up to 5 mm long, borne by a filiform peduncle 8-10 mm long on top of the leaf; floral bracts 1 mm long; pedicels 3 mm long; ovary 1 mm long, the ribs cellular-denticulate; **sepals** yellow, suffused with red-brown, glabrous, subequal, free to near the base, ovate, carinate, the margins and carinae denticulate, the dorsal sepal concave, subacute, 3.3 mm long, 1.6 mm wide, 3-veined, the lateral sepals oblique, diverging widely, acute, 3.3 mm long, 1.3 mm wide, 2-veined; **petals** yellow, divided nearly to the base into 3 flexible, filiform, ciliate segments 1-2 mm long, 0.1 mm wide; **lip** purple, the blades elliptical, 1 mm long, with rounded ends, long-pubescent, the connectives cuneate, pubescent, the body narrow, connected to the middle of the column, the appendix filiform, ciliate, 1.5 mm long; **column** slender, 2 mm long, the apex ciliate, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Frontino, Alto de Cuevas, alt. 2050 m, 14 May 1983, *R. Escobar & E. Valencia 2601* (Holotype: SEL), C. Luer illustr. 9097; same locality, 12 Apr. 1974, R. Escobar et al., flowered in cultivation by M. & O. Robledo at La Ceja, 22 June 1974, *R. Escobar 1261* (JAUM); Entrerríos, Mesopotamia, alt. 2050 m, Dec. 1974, *R. Escobar s.n.* (JAUM); Frontino, Alto de Cuevas, alt. 2050 m, *C. Luer et al. 17601* (MO).

This species is easily recognized by the deeply divided petals with three slender, flexible, ciliated segments, and the similar long, ciliated appendix of the lip. Altogether seven hairy, spiderlike legs protrude from behind the pubescent blades of the lip in the center of the flower.

Two other Colombian species bear flowers with similar filiform segments of the petals. *Lepanthes heptapus* is distinguished from *L. aguirrei* by the latter's larger size and stoutly caudate sepals. The similar *L. hexapus* differs with wider ovate leaves and a lip with a much shorter, ovoid appendix.

**Lepanthes heteroloba** Luer, R. Escobar & Thoerle, Harvard Pap. Bot. 16(2): 328, 2011.

Ety.: From the Greek *heterolobus*, "with different lobes," referring to the lobes of the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, more or less arching near the leaf, 5-7 cm long, enclosed by 7-8 microscopically ciliate, close lepanthiform sheaths with

acuminate tips. **Leaf** horizontal to pendent, coriaceous, ovate, acute, acuminate at the tip, rounded at the base, 3-3.5 cm long, 1.2-1.3 cm wide, the base contracted into a petiole less than 1 mm long. **Inflorescence** a very congested, successively many-flowered raceme up to 9 mm long, borne on top of the leaf by a filiform peduncle 2-8 mm long; floral bracts 0.75 mm long; pedicels overlapping, 1.5 mm long; ovary 1.5 mm long; **sepals** glabrous, translucent light yellow, suffused with light purple at the base, the dorsal sepal with margins smooth, ovate, subacute, 3.4 mm long, 2.2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, subacute to obtuse, margins minutely denticulate, each 2.75 mm long, 1.5 mm wide, 2-veined, connate 1.5 mm; **petals** orange, microscopically cellular, transversely bilobed, 0.5 mm long at the base, 3.5 mm wide, with a capillary marginal lobule 1 mm long between the lobes, the upper lobe obliquely oblong, subtruncate, 2.5 mm long, 1.3 mm wide, 2-veined, the lower lobe triangular, acute, 1 mm long, 0.5 mm wide; **lip** translucent red, margins shortly ciliate, bilaminate, the blades semi-oblong with rounded ends, adherent medially over the column, 1.25 mm long, the connectives narrow, oblique, inserted above the middle of the blade, the body short, connate to the base of the column, the sinus obtuse with an oblong, pubescent appendix, transversely cleft at the tip, 0.4 mm long; **column** 2 mm long, with the anther dorsal, the stigma ventral.

**Antioquia:** Mesopotamia, alt. 2400 m, 25 May 1984, *R. Escobar 3421* (Holotype*: MO*), C. Luer illustr. 11391.

This delicate little species with drooping leaves and a very congested raceme atop is superficially similar to *Lepanthes quandi*, another member of the "*Lepanthes mucronata* group," but the sepals are subacute, not shortly acuminate. The petals are most distinctive with the upper lobe obliquely oblong and much larger than a sharply acute, small lower lobe, rather than subequal in size. Both species share a very slender midlobe emerging from the margin between the two transverse lobes of the petals, and a lip with translucent blades adherent over the column. In *L. heteroloba*, these blades are supported by narrow, oblique connectives inserted above the middle of the blade, while in *L. quandi* the connectives are cuneate and inserted below the middle of the blade. The petals of the similar *L. habenifera* have upper and lower lobes nearly equal in length.

## **Lepanthes hexapus** Luer & R. Escobar, Orquideología 16(2): 144, 1984.

Ety.: From the Greek *hexapous*, "six-footed," referring to the six segments of a pair of petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-2 cm long, enclosed by 5-6 ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, veined in purple, ovate, acute, 10-17 mm long, 7 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, successively several-flowered raceme up to 4 mm long, borne behind the leaf by a filiform peduncle 5-6 mm long; floral bracts 1 mm long; pedicels 2 mm long; ovary 1 mm long; **sepals** glabrous, margins denticulate, the dorsal sepal red, obovate, obtuse, shortly acuminate, 5 mm long, 2.25 mm wide, 3-veined, free from the lateral sepals, the lateral sepals yellow, free except at the base, oblong, diverging, acute, 5 mm long, 1.5 mm wide, 2-veined; **petals** bright orange, tripartite, the parts filiform, 2 mm long, the uppermost ciliate, the others short-ciliate; **lip** purple, bilaminate, the blades narrowly elliptical-oblong, minutely ciliate, 2.25 mm long, the connectives short, broadly cuneate, connate to the column near the middle, the sinus acute with the appendix pubescent, ovoid, bilobulate at the apex; **column** slender, 2.5 mm long, the anther dorsal, the stigma ventral.

**Nariño:** epiphytic in cloud forest above Ricaurte, alt. 1600 m, 3 November 1979, *C. Luer, J. Luer, A. Hirtz & K. Walter 4619* (Holotype: SEL).

**Chocó:** "planta epifita del estrato arborio medio y bajo en el Cerro Mecana," alt.1200 m, July 1988, *G. Misas Urreta 76a* (HPUJ).

**Risaralda:** Pueblo Rico, alt. 2100 m, April 1993, flowered in cultivation at Colomborquídeas, 23 May 1995, *C. Luer 17601* (MO).

Also Ecuador (Esmeraldas, Carchi, Imbabura, Pichincha).

This tiny species occurs sporadically in the Andes from central Colombia to central Ecuador. It is characterized by a congested raceme shorter than the ovate leaf. The sepals are narrow, with the laterals denticulate and essentially free from

each other. The petals are divided into three slender, diverging, nearly equal filiform segments. The upper segment is ciliate; the other segments are short-ciliate. The blades of the lip are narrowly oblong and the appendix is ovoid and pubescent. In the living flower, the six parts of the petals protruding from behind the ciliate blades of the lip look very much like a struggling insect. This species resembles *Lepanthes heptapus* in both epithet and appearance, but *L. heptapus* is distinguished by narrowly ovate leaves and a lip with a long, filiform appendix.

**Lepanthes hirpex** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(5): 584, 1985.

Ety.: From the Latin *hirpex*, "a rake," in reference to the appearance of the long-pedicellate rachis.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-7 cm long, enclosed by 5-6 close, microscopically ciliate lepanthiform sheaths. **Leaf** erect, thickly coriaceous, ovate, subacute, 27-42 mm long, 18-25 mm wide, the rounded base abruptly contracted into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, long-pedicellate, successively flowered raceme up to 10 mm long, borne behind the leaf by a filiform peduncle 10-20 mm long; floral bracts 1-1.5 mm long, echinate; pedicels 3-4 mm long; ovary 1.75 mm long; **sepals** yellow, suffused with red along the midvein, glabrous, ovate, obtuse, margins smooth, the dorsal sepal 3 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, connate 1.5 mm, 3 mm long, 2.75 mm wide together, each 2-veined; **petals** yellow, suffused with red medially, microscopically pubescent, transversely oblong-bilobed, 1 mm long, 3.75 mm wide, the lobes subequal, oblong with rounded apices; **lip** orange-brown, the blades elliptical-oblong, lightly concave, 1.2 mm long, with obtuse ends, glabrous except for ciliate apices, the connectives cuneate, the narrow body connate to the base of the column, the sinus obtuse with a broadly ovoid, pubescent appendix; **column** 1.2 mm long, the anther dorsal, the stigma apical.

**Antioquia:** Mun. Antioquia, Boqueron, alt. 2200-2500 m, collected April 1983 by E. Acevedo, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 29 April 1984, *R. Escobar 3264* (Holotype: JAUM; Isotypes: COL, MO); Urrao, Pabon, Las Cruces, alt. 2400 m, collected by E. Valencia, 23 May 1984, flowered in cultivation by L. & J. Posada at Colomborquídeas, 9 July 1984, *R. Escobar 3299* (MO); epiphytic in forest near Yarumalito, northeast of Santa Rosa, alt. 2350 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia 11380, 11378* (MO).

**Chocó:** San José del Palmar, Cerro del Torrá, alt. 1920-1950 m, 8 Aug. 1988, *P. Silverstone-Sopkin, N. Paz, R. T. González, J. E. Ramos, L. H. Ramos & A. Henao 4152* (MO).

**Valle del Cauca:** Lago Calima, collected by E. Valencia, July 1991, flowered in cultivation by L. & J. Posada at Colomborquídeas, 5-9 May 1993, *C. Luer 16725* (MO).

Also Ecuador (Esmeraldas).

This species is similar to *Lepanthes larvina* Luer & R. Escobar, but differs in the deeply connate lateral sepals; broader lobes of the petals; and an appendix in the sinus of the lip, instead of on the external surface below the sinus. *Lepanthes rutrum* Luer & R. Escobar, also known from Valle del Cauca, bears similar flowers, but they decorate the dorsum of a much broader, heart-shaped leaf borne by ramicauls up to twelve centimeters long.

**Lepanthes hirsutula** Luer & Hirtz, Lindleyana 2: 135, 1987.

Ety.: From the Latin *hirsutulus*, "a little hairy," referring to the petals, lip and appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, slender, 10-27 mm long, enclosed by 5-6 ciliate lepanthiform sheaths. **Leaf** erect, suffused with purple beneath, coriaceous, narrowly ovate, acute, 18-25 mm long, 4-7 mm wide, the cuneate base contracted into a petiole ca. 1 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 8 mm long, borne on top of the leaf by a filiform peduncle 10-18 mm long; floral bracts 0.75-1 mm long, lightly muricate; pedicels 1.5-2 mm long; ovary 1 mm long; **sepals** yellow, suffused with red medially, glabrous, carinate, caudate, margins microscopically cellular-denticulate, the dorsal sepal elliptical, concave, 5 mm long, 3.5 mm wide expanded, the obtuse apex abruptly contracted into a 1 mm long cauda, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblong, oblique, diverging widely, 5.5 mm long, 2.25 mm wide, connate 1 mm, the acute apices contracted into 1 mm long caudae,

2-veined; **petals** orange, long-ciliate, transversely bilobed, 0.5 mm long, 2.75 mm wide, the lobes narrowly oblong, narrowly obtuse, the lower lobe lightly falcate, smaller; **lip** red, bilaminate, the blades narrowly oblong with rounded ends, pubescent, 1.75 mm long, the connectives broadly cuneate, the thick body connate to the base of the column, with a large, broadly oblong, shallowly grooved, pubescent protuberance, resembling a very large appendix; **column** 1.5 mm long, the anther and the stigma apical.

**Putumayo:** purchased from a collector, 2008, flowered in cultivation in Bogotá, Colombia, 2009, by Ramon De Bedout, *L. Thoerle 130* (MO), C. Luer illus. 21469.

Also Ecuador (Esmeraldas, Holotype, *C. Luer et al. 12365*: MO; Imbabura).

This small, delicate species is apparently restricted to the wet forests of southern Colombia and northwestern Ecuador. It is distinguished by the small size with very narrowly ovate leaves and a shorter raceme borne along the dorsal surface of the leaf. The sepals are ovate, acuminate, shortly caudate, and denticulate; the petals are transversely narrowly oblong and long-pubescent; and the blades of the lip are elliptical and also pubescent. The connectives are exceptionally broad, with a broad, rounded, protuberant, pubescent body without an appendix.

**Lepanthes hirtzii** Luer, Phytologia 54(1): 345, 1983.

Ety.: Named in honor of Alexander C. Hirtz of Quito, Ecuador, who has discovered innumerable species of orchids new to science.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls erect, slender to stout, 7-38 cm long, enclosed by 8-15 close, glabrous to microscopically scabrous lepanthiform sheaths. **Leaf** erect, thinly coriaceous, elliptical, 8-13 cm long, 2-5.5 cm wide, the apex long-acuminate, the base broadly cuneate into a petiole 5-7 mm long. **Inflorescence** a subdensely flowered raceme 8-15 cm long, including the peduncle 5-8 cm long, 2-3 flowers open simultaneously; floral bracts 2 mm long; pedicels 3 mm long; ovary 1.5 mm long, narrowly winged; **sepals** orange with brown or purple veins, glabrous, carinate, ovate, acute, acuminate, margins minutely ciliate or glabrous, the dorsal sepal 11 mm long, 9 mm wide, 3-veined, connate to the lateral sepals for 4 mm to form a broad, shallow cup, the margins of all 3 sepals more or less erose and dilated above the angles of connation, the lateral sepals oblique, 11 mm long, 6 mm wide, 2-veined, connate 3 mm; **petals** yellow, more or less suffused with brown or purple, transversely elliptical, bilobed, 1.25 mm long, 2.75 mm wide, minutely pubescent, the lobes about equal, subtriangular, obtuse; **lip** orange to brown, bilaminate, the blades elliptical-ovate, lightly concave, 2 mm long, minutely ciliate, the ends rounded, the connectives broadly cuneate, the body broad, connate to the column above the base, the appendix very small, suborbicular, bearing a pair of even smaller terminal rounded lobules, glabrous; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Putumayo:** cloud forest between La Cocha and Sibundoy, alt. 2700 m, 30 July 1978,*C. Luer et al. 3118* (SEL).

Also Ecuador (Pichincha, Holotype, *C. Luer, J. Luer & A. Hirtz 4394*: SEL; Loja; Morona-Santiago; Zamora-Chinchipe).

This large, handsome species is known from collections in southern Colombia, but is found more frequently on both sides of the Andes in northern Ecuador and on the eastern slopes in southern Ecuador. It is recognized by its large size, with a subdense raceme of large, red, orange to purple flowers that equals or surpasses the leaf in length. The sepals are deeply connate into a bowl, dilated and more or less erose above their connation; the petals are very small; and the lip is unremarkable except for the tiny, two-eared appendix. The flowers of the other Colombian species with similarly bowl-shaped flowers, e.g., *Lepanthes chelonion*, *L. cymbium*, are borne in a more distantly-flowered raceme.

## **Lepanthes hortensis** Luer & R. Escobar, Orquideología 17(3): 194, 1988.

Ety.: From the Latin *hortus*, "a garden," referring to the village of Jardín near where this species was discovered.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 12-21 cm long, enclosed by 10-17 minutely scabrous lepanthiform sheaths. **Leaf** suberect to spreading, thinly coriaceous, suffused with purple beneath, elliptical-ovate, 5-7 cm long, 1.9-2.4 cm mm wide, the apex acute, long-acuminate, the cuneate to rounded base contracted into a petiole ca. 1 mm long. **Inflorescence** a congested, successively many-flowered raceme up to 10 mm long, borne on top of the leaf by a filiform peduncle 3-4 cm long; floral bracts 1.5 mm long; pedicels 3 mm long; ovary 4 mm long, lightly winged; **sepals** translucent orange, lightly suffused with brown, glabrous, carinate, margins microscopically denticulate, the dorsal sepal broadly ovate, obtuse, shortly acuminate, 6.5 mm long, 5.5 mm wide, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals ovate, oblique, diverging, acute, 6.25 mm long, 3 mm wide, 2-veined, connate 3 mm; **petals** yellow, suffused with red-purple at the base, microscopically pubescent, transversely bilobed, 1.25 mm long, 5 mm wide, with a slender, horizontal marginal process at the middle, the upper lobe oblong, truncate, the lower lobe slightly smaller, triangular, acute; **lip** white with brown margins, bilaminate, the blades thin, flat, microscopically pubescent, oblong-lunate, adherent medially over the column, with the apices rounded, 2.3 mm long, the connectives short, cuneate, from near the middle, the body narrow, connate to the base of the column, the appendix large, ca. 1 mm long, pubescent, tonguelike, with a minute apical gland; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Jardín, Alto de Ventanas, between Jardín and Riosucio, alt. 2800 m, 26 May 1983, *R. Escobar, J. & L. Posada, et al. 2727* (Holotype: MO), C. Luer illustr. 9116; same collection, flowered in cultivation at Colomborquídeas, 3 Nov. 1983, *R. Escobar 3161* (JAUM); collection data unknown, flowered in cultivation at Colomborquídeas, 5-9 May 1983, *C. Luer 16722* (MO).

This relatively large species resembles the common and widespread *Lepanthes mucronata*. Thin labellar blades adherent over the column are seen in several similar species with a medial apiculum or lobe on the petals. However, the large, pubescent, tonguelike appendix of *L. hortensis* is distinctive. *Lepanthes hortensis* is most similar to *L. quandi*, but the former is distinguished by the larger plant; larger orange flowers; and petals with a longer, slender medial apiculum.

## **Lepanthes hubeinii** Luer, Orchidee (Hamburg) 38(2): 58, 1987.

Ety.: Named in honor of Herr Hubein of Berlin, who collected this species.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-7 cm long, enclosed by 6-7 essentially glabrous lepanthiform sheaths with the margins of the ostia microscopically scabrous. **Leaf** erect, coriaceous, elliptical, 25-30 mm long, 15-18 mm wide, the subacute to obtuse apex shortly acuminate, the base cuneate into the petiole ca. 1 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 4 mm long, borne on top of the leaf by a filiform peduncle 13-20 mm long; floral bracts minutely ciliate, 1.5 mm long; pedicels 1.5 mm long; ovary 3 mm long; **sepals** light yellow-orange, glabrous, margins smooth, the dorsal sepal broadly ovate, obtuse, 3.5 mm long, 2.2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, acute, 3.25 mm long, 1.5 mm wide, 2-veined, connate 1.5 mm; **petals** orange, ciliate, minutely pubescent, transversely bilobed, 1 mm long, 4.5 mm wide, 3-veined, the lobes triangular, narrowly obtuse, subequal, the upper lobe slightly larger; **lip** red, bilaminate, the blades narrowly ovate, with the apices and bases narrowly rounded, 2.25 mm long, ciliate, microscopically pubescent, the connectives short, forming a broad body, connate to the base of the column, the sinus slightly protuberant with a narrowly oblong, ciliate appendix 1 mm long, convex for the greater part, delicately winged above the middle, with a bifid, pubescent gland at the apex; **column** 2 mm long, the anther apical, the stigma ventral.

**Colombia:** Eastern Cordillera, without specific locality, collected by Herr Hubein, cultivated at the University of Heidelberg 0-14251, flowered in cultivation 16 Oct. 1985, *C. Luer 11422* (Holotype: MO).

This species may be recognized by the short inflorescence lying upon the shortly acuminate, elliptical leaves; the large, ciliate petals; and the narrow, ciliate

blades of the lip with a long, conspicuous, intricately sculpted appendix. *Lepanthes hubeinii* resembles *L. zapatae* Luer & R. Escobar from the Western Cordillera, with proportionally large petals with more or less triangular lobes overlying slightly reflexed sepals. The latter is distinguished by lateral sepals connate less than half their length; petals with the apices of the upper lobes overlapping; and a lip with a minute, external appendix.

**Lepanthes hurgo** Luer & Behar, Revista Soc. Boliv. Bot. 4(1): 7, 2003.

Ety.: From the Lilliputian *hurgo*, "a great lord," referring to the minute size of the flower.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 20 mm long, enclosed by 4 closely fitting, sparsely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, 15 mm long, 9 mm wide, the base broadly cuneate into a petiole 1 mm long. **Inflorescence** a loose, distichous, slightly flexuous, successively several-flowered raceme up to 7 mm long, borne behind the leaf by a slender peduncle 6 mm long; floral bracts 1 mm long; pedicels 1-2 mm long; ovary 0.5 mm long; **sepals** yellow, glabrous, ovate, acute, margins smooth, 1-veined, the dorsal sepal slightly concave, 1.3 mm long, 1 mm wide, connate basally to the lateral sepals for 0.25 mm, the lateral sepals free, oblique, diverging widely, 1.3 mm long, 0.75 mm wide; **petals** orange, red-orange toward the base, microscopically pubescent, transversely bilobed, 0.5 mm long, 2.25 mm wide, with the lobes nearly equal, opposite, ovate, narrowly obtuse; **lip** red, bilobed, microscopically pubescent, the lobes cuneate, 0.4 mm long, with the truncate margin slightly thickened as a vestigial blade, the connectives oblong, as wide as the body, with the appendix minute, triangular; **column** 0.6 mm long, the anther dorsal, the stigma apical.

**Colombia:** without collection data, purchased from a street vendor, *M. Behar 154* (Holotype: MO), C. Luer illustr. 19896.

This tiny species is characterized by an ovate leaf borne by a slightly longer, slender ramicaul. The successively flowered raceme is borne on the back of the leaf. The flowers are extremely small, with single-veined, acute, ovate sepals less than one and a half millimeters long. The petals are proportionally large, with ovate lobes mostly obscuring the sepals. The twice larger column protrudes from the center of the lobes of the minute lip. The lobes are truncate with the margin slightly thickened. The connectives form the body with a triangular appendix.

**Lepanthes hyphosa** Luer & R. Escobar, Orquideología 17(3): 199, 1988.

Ety.: From the Greek *hypha*, "a thread of the mycelium of a fungus," referring to the thread-like lobes of the petals.

**Plant** very small, epiphytic, caespitose; roots slender but thicker than the ramicauls. Ramicauls slender, erect, 7-17 mm long, enclosed by 5-6 tightly fitting, cellular-ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 7-12 mm long, 4.5-6.5 mm wide, the base cuneate into a 1 mm long petiole. **Inflorescence** a subdense, long-pedicellate, distichous, successively few-flowered raceme up to 3 mm long, borne slightly beyond the leaf by a filiform peduncle 8-11 mm long; floral bracts 1 mm long, muriculate; pedicels 1.5-2 mm long; ovary 1 mm long; **sepals** light yellow, diffusely suffused with rose, glabrous, ovate, acute, carinate, margins smooth, the dorsal sepal 3.4 mm long, 1.6 mm wide, 3-veined, connate to the lateral sepals for 0.25 mm, the lateral sepals oblique, diverging, 3.2 mm long, 1.2 mm wide, 2-veined, connate 0.75 mm; **petals** yellow, bilobed with a minute marginal apiculum at the middle, 0.25 mm long, 3.5 mm wide, the lobes filiform, about equally long; **lip** rose-red, U-shaped, 1.2 mm long, the lobes obtuse, embracing and protruding above the column, shortly pubescent, the margins near the apex long-ciliate, the rounded apex shortly bicleft, forming a narrowly triangular "midlobe" between the margins of the cleft, connate to the base of the column; **column** slender, 1 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Yarumal, Briceño, Quebrada El Oro, alt. 1820 m, collected by R. Escobar & E. Valencia, 14 Feb. 1984, flowered in cultivation by L. & J. Posada at Colomborquídeas, 27 June 1984, *R. Escobar 3272* (Holotype: MO), C. Luer illustr. 11530.

This tiny species resembles the common and widespread *Lepanthes acarina*, with a raceme borne by a long peduncle, slightly exceeding the small, elliptical leaf. The flowers, however, bear little resemblance, with the lobes of the petals finely filiform rather than oblong, and the long-ciliate lip surrounding the column like a collar. The apex is shortly doubly split, so that when spread a tiny, triangular midlobe can be seen between the margins of the cleft.

**Lepanthes ictalurus** Luer, Phytologia 54(5): 346, 1983.

Ety.: Named for the genus *Ictalurus* Raf., the genus of the common catfish.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect to suberect, 2.5-8 cm long, enclosed by 5-15 long-ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical to broadly elliptical or subcircular, 10-20 mm long, 8-11 mm wide, the apex obtuse to rounded, the rounded base contracted into a petiole 1-2 mm long. **Inflorescence** a progressively lengthening, successively flowered, flexuous, distichous raceme up to 14 cm long including the filiform peduncle 2-2.5 cm long; floral bracts 1.5 mm long; pedicels 2-4 mm long; ovary 1.5 mm long, with serrulate wings; **sepals** purple to red-brown with yellow margins, glabrous, spiculate along the margins and carinate nerves externally, the dorsal sepal narrowly triangular, concave, 7 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals connate 5 mm into a shallowly concave, ovate, bifid synsepal 7 mm long, 3.5 mm wide, each 2-veined, the apices approximate, acute; **petals** yellow to orange, suffused with rose, long-ciliate-pubescent, markedly unequally transversely bilobed, 0.75 mm long, 4.5 mm wide, the upper lobes short, more or less truncate, incurved into apposition over the column, the lower lobes long-acuminate, linear-triangular; **lip** red-brown to yellow, suffused with rose, bilaminate, the blades elliptical, glabrous, 2 mm long, the apex of each abruptly contracted into a filiform appendage 2 mm long, the connectives short, broadly rectangular, the body broad, connate to the column above the middle, the sinus pubescent with the appendix reduced to a minute apiculum; **column** slender, cylindrical, 2.5 mm long, the anther dorsal, the stigma ventral.

**Putumayo:** epiphytic in scrub forest in the páramo between La Cocha and Sibundoy, alt. 3000 m, 26 Jan. 1987, *C. Luer, J. Luer, C. H. Dodson, O. de Benavides, R. Escobar & E. Valencia 12530* (MO).

Also Ecuador (Loja, Holotype, *Luer et al. 7151*: SEL; Cotopaxi; Pastaza; Morona-Santiago; Zamora-Chinchipe).

This grotesquely flowered species is widely distributed in the Andes of Ecuador, with a single collection known from Colombia. It is one of the most readily distinguished species, easily identified by the long, flexuous racemes of yellow-bordered, red, prickly flowers, with petals with long-acuminate lower lobes and abbreviated, obtuse, incurved upper lobes. Each of the anterior lobes of the lip has a long, slender process, reminiscent of the barbels of a catfish.

*Lepanthes nematostele* Luer has similar cristate, concave sepals, with the laterals deeply connate; petals with a much longer lower lobe; and a long, thin column with the lip connate above the middle. *Lepanthes nematostele* differs with a small lip with arcuate, agglutinated blades.

**Lepanthes illex** Luer, Phytologia 54(5): 347, 1983.

Ety.: From the Latin *illex*, "seductive," referring to a presumed attractive function of the appendix.

**Plant** medium to large in size, epiphytic, caespitose; roots coarse. Ramicauls slender to stout, erect, 6-35 cm long, enclosed by 7-16 glabrous to microscopically scabrous lepanthiform sheaths, minimally dilated at the orifice. **Leaf** thinly coriaceous, veined, erect, narrowly ovate, acute, acuminate, 4-15 cm long, 1.5-3.5 cm wide, the base cuneate into the petiole 4-5 mm long. **Inflorescence** a sublax, successively many-flowered raceme up to 18 cm long including the slender peduncle ca. 5 cm long behind the leaf; floral bracts 2 mm long; pedicels 1.5 mm long; ovary 2 mm long, irregularly erose-winged; **sepals** yellow, suffused with purple centrally, carinate-ciliate externally, microscopically pubescent within, margins microscopically ciliate, the dorsal sepal triangular, acute, 10 mm long, 4 mm wide, 3-veined, connate 1.5 mm to the lateral sepals, the lateral sepals connate 6 mm into an ovate, shortly bifid synsepal 9.5 mm long, 5 mm wide, each 2-veined, the apices acute; **petals** orange, suffused with purple

medially, cellular-glandular, transversely panduriform, bilobed, 0.6 mm long, 2 mm wide, the lobes ovate, obtuse, the lower lobe slightly smaller; **lip** bright purple or orange, bilaminate, the blades oblong-ovate, convex, 1.5 mm long, glabrous, the apices subacute, the bases rounded, the connectives broadly cuneate, the body broad, connate to the column above the base, the appendix ovate, ciliate, pedunculate; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Colombia:** to be expected.
Also Ecuador (Carchi, Holotype, *Luer et al. 6263*: SEL; Sucumbíos).

This robust species, known from high altitudes in northern Ecuador, very close to the Colombian border, is identified by its large size; bilabiate flowers borne in a sublax raceme equaling or surpassing the acuminate leaf in length; small, transverse petals; and a lip with convex lobes and a pedunculate, pubescent appendix. The similar *Lepanthes ostraconopetala* Luer & Hirtz is distinguished by its convex petals with recurved margins.

## **Lepanthes imbricans** Luer & R. Escobar, Orquideología 21(2): 147-149, 1999.

Ety.: From the Latin *imbricans*, "overlapping like shingles," referring to the upper lobes of the petals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-10 cm long, enclosed by 6-10 lepanthiform sheaths with the dilated margins of the ostia microscopically ciliate. **Leaf** erect, coriaceous, elliptical, 3-4.5 cm long, 2-2.5 cm mm wide, the apex obtuse, shortly acuminate, the rounded base contracted into a petiole 5 mm long. **Inflorescence** a loose, successively several-flowered raceme up to 5 cm long, borne behind the leaf by a filiform peduncle 15-25 mm long; floral bracts 2 mm long; pedicels 3 mm long; ovary 3 mm long; **sepals** orange, glabrous, subcarinate, margins smooth, the dorsal sepal broadly ovate, obtuse, 3.6 mm long, 3.3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals broadly ovate, oblique, diverging, obtuse, 3.4 mm long, 2.1 mm wide, 2-veined, connate 1 mm; **petals** dark purple, green at the base, glabrous, transversely bilobed, the upper lobes subcircular, overlapping, 2 mm long, 2 mm wide, with the upper margin more or less irregular-erose, the lower lobes triangular, 0.5 mm long; **lip** orange, bilaminate, the blades thin, more or less concave, glabrous, ovate, with the apices acute, with the margins irregular, 1.4 mm long, the connectives short, broadly cuneate, the body connate to the base of the column, the appendix oblong, pubescent, truncate-retuse at the apex; **column** stout, 1 mm long, the anther dorsal, the stigma apical.

**Cauca (probably):** without specific locality, collected by J. L. Aguirre, flowered in cultivation at J & L Orchids, Easton, Connecticut, 30 Apr. 1996, *C. Luer 17855* (Holotype: MO).

This medium-sized species is distinguished by the oblong, shortly acuminate leaf, more or less equaled in length by a lax, successively flowered raceme. The flowers are borne in a loose raceme behind the leaf. The sepals are broadly ovate and obtuse. The upper lobes of the deep purple petals are large, subcircular, and overlap broadly above the column, contrasting dramatically against the orange sepals. The lower lobes are triangular and much smaller. The blades of the lip are thin with uneven margins, and are borne by short, broadly cuneate connectives. The sepals and petals of *Lepanthes perdita* are similar, but the much smaller flowers are borne in a much shorter, congested raceme on top of a narrowly ovate, acute leaf.

## **Lepanthes imposita** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(1): 56, 1985.

Ety.: From the Latin *impositus*, "laid upon," referring to the position of the apices of the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-3.5 cm long, enclosed by 3-4 close, ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 15-25 mm long, 8-10 mm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a flexible, flexuous, loose, successively several-flowered raceme up to 7 cm long including the filiform peduncle ca. 2 cm

long; floral bracts echinate, 1.5 mm long; pedicels 2-3 mm long; ovary 1.5 mm long; **sepals** light greenish tan, suffused with dull purple, glabrous, triangular-ovate, acute, carinate, margins smooth, the dorsal sepal 8.5 mm long, 4.25 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals oblique, diverging, 8.5 mm long, 3 mm wide, 2-veined, connate 3 mm; **petals** red-purple, microscopically pubescent, transversely bilobed, 1.25 mm long, 4.25 mm wide, obtusely angled on the outer margin between the lobes, the upper lobe oblong, lightly narrowed below the rounded, incurved apex, the apices of the opposite petals overlapping, the lower lobe obliquely triangular, obtuse, incurved; **lip** red-purple, the blades broadly obovate, reniform as seen from above, convex with rounded ends, pubescent, 2 mm long, the connectives broadly cuneate, the broad body connate to the column near the middle, the sinus obtuse with a short, pyramidal, pubescent appendix; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** Cerro Pelado, epiphytic in subpáramo cloud forest, alt. 2750 m, 1 May 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7671* (Holotype: SEL); flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 3 Aug. 1984, *R. Escobar 3337* (COL, JAUM).

This small species is characterized by the long, flexible, flexuous raceme, bearing flowers with relatively large sepals and a lip with pubescent blades. The petals have narrowly oblong upper lobes that are slightly narrowed below the overlapping, incurved, rounded apices. The petals of *Lepanthes conchyliata* are similar, but are at least as wide as the length of a sepal, and the flowers are borne by an inflorescence no longer than the leaf.

**Lepanthes impotens** Luer & R. Escobar, Orquideología 20(3): 299-302, 1997.

Ety.: From the Latin *impotens*, "weak," in reference to the habit.

**Plant** medium in size, weak, epiphytic, caespitose; roots slender. Ramicauls very slender, suberect, 7-11 cm long, enclosed by 12-13 microscopically scabrous lepanthiform sheaths. **Leaf** horizontal, purple, thinly coriaceous, finely pubescent, ovate, acute, long-acuminate, 37-43 mm long, 9-11 mm wide, the base rounded or broadly cuneate, contracted into a petiole ca. 1 mm long. **Inflorescence** a congested, subsecund, successively several-flowered raceme, up to 5 mm long, borne on top of the leaf by a filiform peduncle 5-8 mm long; floral bracts lightly muriculate, 1 mm long; pedicels 1 mm long; ovary 1.5 mm long; **sepals** translucent yellow, glabrous, subcarinate, margins denticulate, the dorsal sepal broadly ovate, subacute, 3.5 mm long, 2.75 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals connate 1.5 mm into a broadly ovate, bifid synsepal, 3.5 mm long, 3.5 mm wide, each 2-veined, the apices acute; **petals** red-orange, pubescent, transversely bilobed, 1 mm long, 4 mm wide, the upper lobe subquadrate, with the apex obliquely truncate, the lower lobe narrowly triangular, acute, attenuate; **lip** red-orange, bilaminate, the blades minutely pubescent, elliptical with the ends subacute, 1.25 mm long, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus protruding, ciliate, without an appendix; **column** 1 mm long, the clinandrium large with the anther dorsal and the stigma ventral.

**Risaralda:** above Pueblo Rico, epiphytic in cloud forest below the TV antenna, alt. 2000 m, 14 May 1993, *C. Luer, J. Luer, A. de Wilde & J. Gómez 16842* (Holotype: MO).

Vegetatively, this weak little species is similar to several other species with very slender ramicauls with tightly applied, nondilated lepanthiform sheaths; and small, horizontal leaves with a long-acuminate apex as long as the blade. The leaf is finely and sparsely pubescent. The delicate plants often consist of only one ramicaul with leaf.

The sepals and petals are nearly identical to those of the Ecuadorian *Lepanthes odobenella* Luer & Hirtz, but vegetatively the latter is considerably larger and more robust. The blades of the lip of the two species are similar, but the appendix of *L. odobenella* is well-developed and relatively large with a hinge, margins, and a central cavity. The appendix of *L. impotens* is reduced to a ciliate margin of the body of the lip.

## **Lepanthes insolita** Luer & R. Escobar, Orquideología 17(3): 204, 1988.

Ety.: From the Latin *insolitus*, "strange," referring to the unusual lip of the species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-5 cm long, enclosed by 6-7 tightly fitting, microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, 25-30 mm long, 15 mm wide, the rounded base contracted into a 1 mm long petiole. **Inflorescence** a dense, distichous, successively several-flowered raceme up to 6 mm long, borne behind the leaf by a filiform peduncle 6-9 mm long; floral bracts 1.5 mm long, muriculate; pedicels 2 mm long; ovary 1 mm long; **sepals** translucent yellow, glabrous, more or less reflexed, connate only at the very base, low-carinate, margins smooth, the dorsal sepal elliptical, the apex rounded, 5 mm long, 2.8 mm wide, 3-veined, the lateral sepals obovate-oblong, diverging widely, 4 mm long, 2.5 mm wide, 2-veined, the apex broadly obtuse to rounded; **petals** creamy yellow, bilobed, 1 mm long, 7 mm wide, the lobes equal, oblique, narrowly triangular, narrowly obtuse, 1-veined; **lip** yellow, microscopically pubescent, 3-lobed, 3 mm long, 3.5 mm wide across the lateral lobes, the lateral lobes expanded, broadly oblong with the apex rounded, the middle lobe bright red-purple, descending, narrowly triangular, acute, connate to the column above the base; **column** 1.5 mm long, the anther and stigma apical.

**Antioquia:** Mun. Urrao, Pabón, Las Cruces, alt. 2400 m, collected by E. Valencia, 23 May 1984, flowered in cultivation by L. & J. Posada at Colomborquídeas, 3 Aug. 1984, *R. Escobar 3354* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 11524.

Vegetatively, this species is indistinguishable from hordes of other species in the genus. Its flowers are distinctive, with obtuse, reflexed sepals; petals with protruding, hornlike upper lobes and similarly narrowly triangular lower lobes; and a three-lobed lip. The expanded lateral lobes of the lip are broadly rounded while the protruding, bright red-purple midlobe is long-pointed.

## **Lepanthes intonsa** Luer, Phytologia 54(5): 348, 1983.

Ety.: From the Latin *intonsus*, "unshaven," referring to the long hairs on the lip.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2.5-4.5 cm long, enclosed by 5-7 minutely ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, more or less suffused with purple, ovate, acuminate, acute, 2.5-3 cm long, 1.2-1.7 cm wide, the rounded bases abruptly contracted into a petiole 2 mm long. **Inflorescence** a congested, distichous, successively flowered raceme up to 10 mm long, borne by a filiform peduncle 5-8 mm long along the back side of the leaf; floral bracts echinate, 1-1.25 mm long; pedicels 1.5-2 mm long; ovary 2.5 mm long; **sepals** yellow, suffused with purple, glabrous, broadly ovate, obtuse, margins minutely ciliate, the dorsal sepal 3.5-4 mm long, 3.1 mm wide, 3-veined, connate 0.5 mm to the lateral sepals, the lateral sepals oblique, diverging, 3-3.5 mm long, 2.25 mm wide, 2-veined, connate 1 mm; **petals** yellow, suffused with orange, microscopically pubescent, transversely oblong, bilobed, 1.25 mm long, 3.75 mm wide, the outer margin deeply indented at the junction between the oblong, apically rounded upper lobe and the smaller, oblique, obtuse lower lobe; **lip** yellow, suffused with rose, bilaminate, the blades oblong-obovate, concave, with both ends rounded, 1.3 mm long, the apical margin with a few very long cilia, the connectives oblong, elongated, lifting the blades above the column, the body connate to the column near the middle, the appendix straplike, sigmoid in the lateral view, pubescent, terminating in a small gland, hinged to the sinus; **column** stout, 1.5 mm long, the anther apical, the stigma ventral.

**Cauca:** Puracé, alt. 2800 m, collected by E. Valencia, May 1992, flowered in cultivation at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5205* (MO); without collection data, obtained from Andrea Niessen de Uribe, Orquídeas del Valle, Cali, Valle del Cauca, flowered in cultivation by J & L Orchids, Easton, Connecticut, Jan. 2007, *C. Luer 21050* (MO).

Also Ecuador (Loja, Holotype, *Luer et al. 6212*: SEL; Carchi; Morona-Santiago; Zamora-Chinchipe), Bolivia (Cochabamba).

This species occurs locally in southern Colombia, as well as southern Ecuador and northcentral Bolivia. Explorations in Peru may eventually connect the two populations. *Lepanthes intonsa* is identified by the congested inflorescence shorter than the ovate leaf; broad, minutely denticulate sepals; and large petals with a prominent indentation on the outer margin between the lobes. The lip is

characterized by oblong blades with long cilia along the apical margin, often long enough to enmesh below the column; the blades are held high above the column by elongated connectives; and a large, sigmoid appendix is hinged to the sinus. It is similar to *L. jubata* Luer, also known from Colombia, but the petals of the latter lack the deep indentation between the lobes, and the lip is edged with long, straight cilia on all but the interior margins.

**Lepanthes ionoptera** Rchb. f., Bonplandia 3: 70, 1855.

Ety.: From the Greek *ionoptera*, "violet-winged," referring to the flowers.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-5.5 cm long, enclosed by 4-6 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 2-3.2 cm long, 0.8-1.5 cm wide, cuneate below into a petiole 2-3 mm long. **Inflorescence** a loose, successively many-flowered raceme up to 18 cm long, borne by a peduncle 3-5 cm long; floral bracts 2 mm long; pedicels 1-4 mm long; ovary 2 mm long; **sepals** purple to red-brown, with or without light green margins, glabrous, concave, ovate, acute, long-acuminate, margins smooth to minutely ciliate or erose, the dorsal sepal 14-22 mm long, 3.5-4 mm wide, 3-veined, connate 1 mm to the lateral sepals, the lateral sepals narrowly linear-ovate, long-attenuate, apices approximate or nearly so, 14-24 mm long, 3.5 mm wide at the base, 2-veined, connate 4 mm; **petals** orange-brown, microscopically pubescent, transversely bilobed, 1 mm long, 4.5-6 mm wide, the lobes narrowly subtriangular, acute, the upper lobe slightly longer than the lower lobe; **lip** rose, bilaminate, the blades oblong, slightly convex, with both ends rounded, minutely ciliate, 1.5-2 mm long, the connectives cuneate, the body connate to the column above the base, the appendix pedunculate, inflated, shortly pubescent, hinged at the sinus; **column** stout, 2 mm long, the anther apical, the stigma ventral.

**Norte de Santander:** Ocaña, Pericos, Río Magdalena, Puerto Nacional, 1852, *H. Wagener s.n.* (Holotype: W); Páramo de Jurisdicciones, alt. 2570 m, 30 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7650* (SEL); Toledo, Alto de Mefué, alt. 2500 m, 12 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10290* (MO).

**Santander:** between Bucaramanga and Berlin, alt. 2300 m, collected April 1989, by H. Angarita, flowered in cultivation by the Robledos at La Ceja, *R. Escobar 4045* (MO), C. Luer illustr. 14789.

Also Venezuela (Táchira), Bolivia (Cochabamba).

This species is one of the few of the genus *Lepanthes* that found their way from the Andes into the herbaria of Europe during the nineteenth century. It is one of the more spectacular species, with a long, loose raceme that slowly produces a succession of large, single flowers with very narrow, long-acuminate, purplish sepals. It is easily recognized in spite of the varied length and margins of the sepals.

**Lepanthes isochila** Luer, Orquideología 20(2): 196-198, 1996.

Ety.: From the Greek *isocheilos*, "with equal lips," referring to the similarity of the synsepal to the dorsal sepal.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-4.5 cm long, enclosed by 5-6 microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, rigid, thick, elliptical, obtuse, 20-25 mm long, 11-14 mm wide, with the base cuneate into a petiole 2 mm long. **Inflorescence** a loose, successively few-flowered raceme 3-4 cm long including the slender peduncle 1-2 cm long; floral bracts 1.5 mm long; pedicels 1.5-2 mm long; ovary 1.5-2 mm long; **sepals** glabrous, carinate, margins smooth, the dorsal sepal green, suffused with rose-brown between the veins, triangular, acute, 8 mm long, 5.5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals green, suffused with red-brown along the margins, connate to near the apex into an acute, triangular synsepal, 8 mm long, 5.5 mm wide, each 2-veined; **petals** yellow, suffused with red along the margins and basally, cellular-glandular, transversely bilobed, 1.5 mm long, 4 mm wide, the lobes subequal, oblong with rounded apices; **lip** orange, bilaminate, the blades ciliate, oblong with rounded ends, 2 mm long, the connectives very short, broadly cuneate, forming a broad body, connate to the base of the column, the sinus obtuse with a concave, triangular appendix; **column** semiterete, 2 mm long, with the anther purple, dorsal, and the stigma ventral.

**Colombia:** without collection data, purchased from a street vendor in Medellín, flowered in cultivation at Mixco, Guatemala, 17 Feb. 1990, *M. Behar 36* (Holotype: MO), C. Luer illustr. 14675.

This species is distinguished by the thick, rigid, elliptical leaves surpassed by a loose, successively flowered raceme of bilabiate flowers. Except for the minutely bifid apex of the synsepal, the dorsal sepal and the synsepal are triangular and acute with the same dimensions. The sides of the blades of the lip are deflexed above the middle, and the appendix is triangular and concave.

**Lepanthes isosceles** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(4): 372, 1984.

Ety.: From the Greek *isosceles,* "equal-legged," in reference to the three equal sepals.

**Plant** small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 2-5 cm long, enclosed by 6-7 lepanthiform sheaths with microscopically ciliate, dilated ostia. **Leaf** erect, coriaceous, narrowly ovate, acute, 30-37 mm long including a 3-mm long petiole, 8-10 mm wide, the base cuneate into the petiole. **Inflorescence** a flaccid, arcuate to pendent, lax, successively flowered raceme up to 15 cm long including the filiform peduncle ca. 2 cm long; floral bracts 2 mm long; pedicels 2 mm long; ovary 1 mm long; **sepals** similar, yellow, suffused diffusely with light brown, densely microscopically pubescent, narrowly triangular, 3-veined, acute, essentially free to the base, margins cellular-denticulate, 6.5 mm long, 2.25 mm wide, laterals diverging widely; **petals** orange, suffused with red, transversely bilobed, oblong, 0.5 mm long, 1.25 mm wide, the lobes equal with rounded ends; **lip** minute, orange, suffused with red, the blades oblong-lunate, 0.8 mm long, embracing the column above the base, the ends rounded, the connectives broadly cuneate, connate to the base of the column, the appendix minute, triangular; **column** rose, slender, cylindrical, 3 mm long, the anther and stigma apical.

**Magdalena:** Sierra Nevada de Santa Marta, along road to the TV antenna, alt. 2500 m, Apr. 1981, collected by R. Escobar, D. Portillo, et al., flowered in cultivation at Colomborquídeas, 20 Apr. 1983, *C. Luer 8740* (Holotype: SEL); flowered in cultivation at Colomborquídeas, 13 Jan. 1984, *R. Escobar 3192* (Clonotype: JAUM).

*Lepanthes isosceles* is known only from a single collected plant. The long, drooping, loosely flowered raceme of successive flowers is unusual for the genus. It is one of very few species with both an inflorescence exceeding the leaf and three-veined lateral sepals. The narrowly triangular sepals are free and essentially equal; the petals are minute; and the tiny lip embraces the base of a long, protruding column. *Lepanthes alvarezii* shares a relatively large flower with expanded triangular sepals and a protruding column, but is distinguished by petals with a vestigial upper lobe and a narrow, linear lower lobe as long as the lateral sepals, borne by a much larger plant with ramicauls 10 centimeters or more long.

**Lepanthes janitor** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(5): 476, 1984.

Ety.: From the Latin *janitor*, "a doorkeeper," referring to the blades of the lip that close over the column.

**Plant** medium to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-18 cm long, enclosed by 11-19 minutely ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, narrowly ovate, acute, acuminate, 4-5 cm long, 1-1.7 cm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a congested, successively several-flowered raceme up to 10 mm long, borne behind the leaf by a filiform peduncle 7-25 mm long; floral bracts 1.5 mm long; pedicels 2.5-4.5 mm long; ovary 2 mm long; **sepals** translucent light yellow-green, glabrous, margins cellular-denticulate, the dorsal sepal triangular, acute, 5-5.5 mm long, 3-4.25 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals oblique, diverging, ovate, acute, 5-6 mm long, 2-2.2 mm wide, 2-veined, connate 2 mm; **petals** green, pubescent, transversely bilobed, 1-1.5 mm long, 4-4.5 mm wide, with an uncinate marginal lobule between the lobes, the upper lobe oblong, truncate, suffused with purple-brown across the truncate apex, the lower lobe smaller, triangular, acute; **lip** translucent green, suffused with red-purple, bilaminate, the blades glabrous, semicircular with rounded ends, adherent medially over the

column, 1.5-1.8 mm long, the connectives narrow with a narrow body connate to the base of the column, the sinus filled with a large, oblong, concave, pubescent appendix, 1 mm long, with a truncate, long-ciliate apex; **column** 1.5 mm long, with the anther dorsal, the stigma ventral.

**Antioquia:** Yarumal, Briceño, El Oro, alt. 1730 m, 20 May 1983, flowered in cultivation at Colomborquídeas, Medellín, 13 Jan. 1984, *R. Escobar & E. Valencia 3197* (Holotype: MO; Isotypes: COL, JAUM, SEL), C. Luer illustr. 9495; terrestrial in cloud forest along Río El Oro, north of Yarumal, alt. 2700 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10064* (MO).

**Risaralda:** along new road to TV antenna south of Pueblo Rico, alt. 2400 m, 14 May 1993, *C. Luer et al. 16844* (MO).

**Nariño:** epiphytic in cloud forest around La Planada, above Ricaurte, alt. 1950 m, 2 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4538* (SEL); epiphytic in cloud forest above Ricaurte, alt. 1600 m, 3 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4617* (SEL).

Also Ecuador (Esmeraldas).

This species, locally but widely distributed in the Andes of Colombia and Ecuador, is distinguished by long, slender ramicauls and a proportionally small, narrowly ovate leaf with the congested raceme borne behind. The color of the flowers is similar to others also characterized by an uncinate marginal lobule. The sepals are translucent while the petals are green with a dark purple-brown, truncate upper lobe. The blades of the lip are translucent and adherent over the column. The appendix is large, oblong, and concave with a long-ciliate apex. The plants examined are very stable morphologically through their range.

Several other Colombian species are very similar vegetatively and florally. *Lepanthes janitor* resembles *L. agglutinata*, but the inflorescence of *L. agglutinata* is secund and the column lacks the large rostellar flap. The sepals of the similar *L. pilosiaures* are smooth-margined rather than denticulate, and its column also lacks the large rostellar flap. The petals of *L. posadae* are distinguished by scimitar-shaped lower lobes, much longer than the upper lobes; and the column is bifurcated with a bilobed stigma.

**Lepanthes jardinensis** Luer & R. Escobar, Orquideología 19(1): 38-39, 1993.

Ety.: Named for the municipality of Jardín in the Central Cordillera of Colombia, where this species occurs.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls erect, stout, 7-20 cm long, enclosed by 8-14 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, acuminate, 7-9.5 cm long including the petiole 3-5 mm long, the blade 2.2-2.7 cm wide, cuneate below into the petiole. **Inflorescence** racemose, 3-10 loose, flexuous, distichous, successively many-flowered racemes, up to 15 cm long including the 3-4 cm long peduncle; floral bracts oblique, 2 mm long; pedicels 1.5 mm long; ovary 1.5-2 mm long, the ribs subverrucose; **sepals** dark yellow, suffused with orange-brown, carinate, microscopically pubescent, margins smooth, the dorsal sepal ovate, acute, acuminate, 6 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals connate into an ovate, bifid synsepal with the apices acuminate, diverging, 6 mm long, 4.25 mm wide, each 2-veined; **petals** dark purple, minutely pubescent, transversely bilobed, 1 mm long, 2.66 mm wide, the lobes subtriangular, obtuse, the lower lobe slightly smaller; **lip** dark purple, bilaminate, the blades minutely pubescent, ovoid with rounded ends, 1.8 mm long, the connectives cuneate, the body broad, connate to the base of the column, the sinus broad, the appendix ovoid with a minute, stellate gland at the tip; **column** 2 mm long, the anther apical, the stigma ventral.

**Antioquia:** Mun. Jardín, above Cifuentes, alt. 2800 m, collected by R. Escobar, J. Posada, L. Moreno de Posada, et al., July 1986, flowered in cultivation at Colomborquídeas, 3 Jan 1993, *R. Escobar 2696* (Holotype: JAUM; Isotypes: MO, SEL), C. Luer illustr. 16941.

This large species is apparently endemic in a residual forest in the Central Cordillera of Colombia. A few flexuous, successively flowered racemes, longer than the leaf, bear dark yellow flowers with dark purple petals and lip. Two or three

flowers are often open simultaneously. The sepals are minutely pubescent and acuminate; the petals are small, pubescent and transversely oblong. The blades of the lip are also pubescent, and a tiny, stellate gland occupies the tip of the minute appendix. The similar *Lepanthes guanacasensis*, from southern Colombia, differs with glabrous sepals that are more deeply connate; petals with the upper lobe much larger than the lower; and a lip with narrower, glabrous blades.

**Lepanthes juan-felipei** Luer & Thoerle, Harvard Pap. Bot. 16(2): 329, 2011.

Ety.: Named in honor of Juan Felipe Posada of the renowned Colomborquídeas nursery in El Retiro, Colombia.

**Plant** large, epiphytic, caespitose; rhizome and roots unknown. Ramicauls slender, erect, 15-20 cm tall, enclosed by ca. 15 close lepanthiform sheaths with acuminate tips, microscopically ciliate. **Leaf** erect, coriaceous, elliptical, obtuse, long-acuminate at the apex, 3.5-4.5 cm long, 1.8 cm wide, the rounded base contracted into a petiole 2 mm long. **Inflorescence** 2-3 loose, congested, successively flowered racemes up to 10 mm long, borne by a filiform peduncle 20-35 mm long rising behind the leaf; floral bracts 1.5 mm long, acuminate; pedicels 1.5 mm long; ovary 1 mm long; **sepals** orange with red inner margins, glabrous, margins smooth, the dorsal sepal ovate, acute, 4.5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, acute, diverging, 4 mm long, 2 mm wide, 2-veined, connate 1.5 mm; **petals** yellow, glabrous, transversely bilobed, 1.25 mm long, 2.5 mm wide, the upper lobe triangular, sharply and shortly incised at the tip, 1.25 mm long, 1.25 mm wide, the lower lobe triangular acute, 1.5 mm long, 1 mm wide; **lip** red, bilaminate, the blades microscopically ciliate, ovate, acute at the apex, rounded at the base, 1.5 mm long, 0.75 mm wide, the connectives broad, from above the middle, the body broad, connate to the column above the middle, the appendix broadly triangular, concave, ciliate; **column** slender, terete, 1.5 mm long, the anther apical, the stigma ventral.

**Nariño:** Puerres, collected by J. L. Aguirre, flowered in cultivation at Colomborquídeas, 14-16 June 2009, *L. Thoerle 136* (Holotype: MO), C. Luer illustr. 21468.

This species is distinguished by proportionally very long, slender ramicauls bearing elliptical leaves long-acuminate at the apex. From ascending, slender peduncles nearly as long as the leaf, a congested, successively flowered raceme descends. The sepals are ovate and acute; the lobes of the petals are triangular and acute, with the tip of the upper lobe notched; the blades of the lip are ovate; the appendix is proportionally large, concave and ciliate; and the column is elongate and slender.

**Lepanthes jubata** Luer, Phytologia 54: 350, 1983.

Ety.: From the Latin *jubatus*, "crested with hairs," referring to the long hairs on the margins of the blades of the lip.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, suberect, 2-7 cm long, enclosed by 5-9 minutely ciliate lepanthiform sheaths. **Leaf** erect to suberect, coriaceous, more or less suffused with purple, ovate, acuminate, acute, 10-28 mm long, 7-13 mm wide, the margins smooth or minutely denticulate, undulate, the rounded base abruptly contracted into a petiole 1-2 mm long. **Inflorescence** a congested, distichous, successively flowered raceme up to 8 mm long, borne by a filiform peduncle up to 12 mm long up the back of the leaf; floral bracts 1-1.25 mm long, minutely spiculate; pedicels 0.5-1 mm long; ovary 0.5-1.5 mm long, echinate; flower parts red to yellow; **sepals** glabrous, ovate, shortly acuminate, carinae along the nerves spiculate, margins shortly laciniate, the dorsal sepal acute, 3-4 mm long, 1.8-2.25 mm wide, 3-veined, connate basally, the lateral sepals oblique, diverging, obtuse, connate to about the middle, 3-4 mm long, 3.5-4 mm wide together, each 2-veined; **petals** transversely oblong, bilobed, 1 mm long, 3.25-4.25 mm wide, both lobes obtuse, the upper longer; **lip** bilaminate, the blades oblong, oblique, the margins long-ciliate with straight hairs, the apices narrowly obtuse, the bases rounded, the connectives broad, rectangular, erect, lifting the blades above the column, the body broad, connate to the base of the column, the sinus broadly rounded and protruding with a minute, pedunculated, bilobed appendix; **column** stout, 1 mm long, the anther dorsal, the stigma ventral.

**Colombia:** without collection data, obtained from Orquídeas del Valle, flowered in cultivation at J & L Orchids, Easton, Connecticut, January 2007, J & L 107-654, *C. Luer 21050* (MO).

Also Ecuador (Napo, Holotype, *Luer et al. 6319*: SEL; Carchi; Sucumbíos; Imbabura; Pichincha; Tungurahua; Morona-Santiago; Zamora-Chinchipe), Peru.

This pretty little species is relatively frequent and widely distributed through Ecuador and northern Peru, but has been encountered much less frequently in Colombia. The margins of the leaves are usually smooth, but occasionally they are undulate. The congested raceme is shorter than the leaf; the sepals are ovate and laciniate; the petals are transversely oblong; the blades of the lip are long-ciliate and held above the column by rectangular connectives; and the body of the lip is protuberant with a minute, pedunculate, bilobed appendix. Also known from Colombia, the similar *Lepanthes intonsa* is distinguished by petals with a deep indentation between the lobes, and a lip with long cilia more or less restricted to the apices of the blades.

**Lepanthes labiata** Luer, Orquideología 22(1): 38-42, 2001.

Ety.: From the Latin *labiatus*, "with noticeable lip," referring to the labellum.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-4 cm long, enclosed by 6-7 microscopically scabrous, acuminate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, suffused with purple, ovate, acute, acuminate, 22-27 mm long, 7-11 mm wide, cuneate below into the subpetiolate base. **Inflorescence** a distichous, very congested, successively many-flowered raceme, up to 5 mm long, borne on top of the leaf by a slender peduncle 5-7 mm long; floral bracts muriculate, 0.5 mm long; pedicels 1 mm long; ovary 1 mm long; **sepals** orange, glabrous, margins smooth, the dorsal sepal oblong-ovate, obtuse, 1.75 mm long, 1 mm wide, 3-veined at the base, free from the lateral sepals, the lateral sepals connate 0.6 mm, oblong, obtuse, diverging, 1.75 mm long, 1 mm wide, 1-veined; **petals** red-orange, minutely pubescent, long-ciliate, transversely bilobed, 1.5 mm long, 0.6 mm wide, the lobes subcircular, subequal, the upper lobe rounded, the lower lobe obtuse; **lip** red-orange, minutely pubescent, long-ciliate, 1-lobed, oblong, 1.2 mm long, 0.6 mm wide, with the apex rounded, retuse, with the appendix a minute lobule external at the sinus, the base rounded, connate to near the base of the column by a short, slender strap; **column** terete, 0.6 mm long, the anther and stigma apical.

**Valle del Cauca:** Mun. Buenaventura, old road to Cali, Quebrada Yesqueros, alt. 50 m, 9 May 1997, *J. T. Otero 1004* (Holotype: CUVC; Isotype: MO), C. Luer illustr. 18458.

This small species is apparently endemic in the lowland coastal forests of Buenaventura. It is distinguished by ovate, acuminate leaves suffused with purple, and a shorter, successively flowered inflorescence of very small flowers. The sepals are glabrous and obtuse, with the lateral sepals single-veined; the petals are bilobed with the lobes rounded and long-ciliate; the unusual lip is proportionally large, long-ciliate, and oblong with the apex rounded and a tiny, lobulate appendix on the exterior of the sinus. Some forms of the Central American *Lepanthes blephariglossa* Schltr. have an equally prominent and unusual lip, but it is accompanied by two-veined lateral sepals and proportionally very large petals.

**Lepanthes lacera** Luer & Thoerle, Harvard Pap. Bot. 16(2): 329, 2011.

Ety.: From the Latin *lacerus*, "lacerate," referring to the protruding margin of the clinandrium.

**Plant** medium to large, caespitose; roots slender. Ramicauls erect, stout, 6 to 10 or more cm long, enclosed by ca. 8 minutely ciliated lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, acuminate, 8-9 cm long, 3-3.5 cm wide, the base rounded, contracted into a petiole 3 mm long. **Inflorescence** a congested, successively many-flowered raceme, at least 6 mm long, borne behind the leaf by a peduncle ca. 40 mm long; floral bracts 1-1.5 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** yellow, glabrous, margins smooth, the dorsal sepal narrowly ovate, acute, 8 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals connate 3.5 mm into an ovate, bifid

synsepal, concave centrally, 7 mm long, 4 mm wide, each 2-veined, with the tips acute, approximate; **petals** transversely bilobed, glabrous, the upper lobe narrowly triangular, acute, 3 mm long, 1 mm wide, the lower lobe 2 mm long, 1 mm wide below the middle, very narrowly uncinate above the middle; **lip** dark purple and yellow, bilaminate, the blades elliptical with obtuse ends, glabrous, 1.5 mm long, the connectives cuneate, from the below the middle of the blade, the body narrow, connate to the column above the base, the sinus retuse with a short, oblong, membranous appendix; **column** slender, clavate, 2 mm long, the anther apical with the protruding apex of the clinandrium lacerate, the stigma ventral.

**Antioquia:** Parque Natural "Las Orquídeas," right bank of the confluence of the rivers Polo and Calles, alt. 1380 m, 26 Mar. 1988, *A. Cogollo, J. Ramírez & O. Alvarez 2639* (Holotype: MO), C. Luer illustr. 21523.

This species from the Central Cordillera of Colombia is distinguished by the long, lacerate, protruding lower margin of a proportionally large clinandrium. The plant is large with a very congested, short-pedicellate raceme borne by a peduncle about half as long as the leaf. The dorsal sepal and upper lobe of the petals are narrowly acute, while the synsepal is deeply bifid, and the short lower lobe of the petals terminates in a filiform, uncinate process.

The similar margins of the clinandrium of *Lepanthes odontostemma* Garay & Dunst. are described and illustrated in one of two drawings of the clinandrium in Venezuelan Orchids Illustrated vol. 6, p. 195. Irregularly denticulate margins of the clinandrium are seen in a few other species as well.

**Lepanthes larvina** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(2): 162-164, 1984.

Ety.: From the Latin *larvinus*, "with a larva," referring to the appearance of the appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-5.5 cm long, enclosed by 4-7 darkly colored, close, microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple, broadly elliptical, obtuse, 20-35 mm long, 10-20 mm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a dense, distichous, successively flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 10-13 mm long; floral bracts 1 mm long, echinate; pedicels 2 mm long; ovary 2 mm long; **sepals** light orange, glabrous, ovate, acute, margins smooth, the dorsal sepal 3.3 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals diverging, 2.75 mm long, 1.5 mm wide, 2-veined, connate 0.5 mm; **petals** orange, suffused with red medially, microscopically pubescent, transversely bilobed, 1 mm long, 3.75 mm wide, the lobes similar, falcate-incurved, the acute apices minutely deflexed, the upper lobe slightly larger; **lip** red, microscopically pubescent, the blades flat, ovate, 1 mm long, the apices narrowly obtuse, the bases rounded, the connectives cuneate, the body narrow, connate to the base of the column, the appendix pubescent, ovoid, along the external surface of the body; **column** 1 mm long, the anther apical, the stigma subapical.

**Antioquia:** Frontino, below El Plateado, alt. 1820 m, 3 May 1983, *C. Luer, J. Luer & R. Escobar 8984* (Holotype: SEL); Abriaquí, alt. ca. 1800 m, collected 2 July 1970, flowered in cultivation in San Claver (Santandercito), 20 February 1971, *P. Ortiz 417* (HPUJ).

**Chocó:** "Pequeña planta epifita del estrato arboreo alto +/- frecuente a 50 mts.," July 1988, *G. Misas Urreta 150a, 150b, 150c* (HPUJ).

This little species, with a congested inflorescence shorter than the broadly elliptical leaf, has essentially free sepals; petals with falcate lobes; and a lip with the ovoid, pubescent appendix along the external surface of the body, resembling a larva. *Lepanthes larvina* is similar to *L. hirpex*, but the latter differs in the more deeply connate lateral sepals, broader lobes of the petals, and an appendix in the sinus of the lip instead of on the external surface of the body. *Lepanthes rutrum* bears similar flowers, but the larger, broadly cordate leaf, borne by ramicauls up to 12 centimeters in length, is distinctive.

**Lepanthes lasiopetala** Garay & Dunst., Venez. Orchids Ill. 6: 178, 1976.

Ety.: From the Greek *lasiopetala*, "with hairy petals," referring to the petals.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-11 cm long, enclosed by 5-8 costate lepanthiform sheaths, ciliate on the ribs and margins. **Leaf** erect, coriaceous, frequently suffused with purple, elliptical to narrowly elliptical, acute to abruptly acuminate, 2-6.5 cm long, 0.8-2.8 cm wide, the base cuneate to rounded, contracted into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 20 mm long, borne behind the leaf by a slender peduncle 5-20 mm long; floral bracts 1 mm long; pedicels 0.75 mm long; ovary 1-1.5 mm long; **sepals** light yellow, microscopically pubescent, carinate, margins smooth, the dorsal sepal obovate, the apex obtuse with the tip acuminate, reflexed, 2.6-4 mm long, 1.75-2.6 mm wide, 3-veined, connate to the lateral sepals for less than 1 mm, the lateral sepals ovate, oblique, acute, acuminate, diverging, 3-5 mm long, 1.5-2 mm wide, connate less than 1 mm, 1-veined; **petals** light yellow, red medially, minutely pubescent to long-pubescent, transversely bilobed, 1 mm long, 2 mm wide, the lobes obtusely oblong-ovate, the upper lobe slightly larger than the lower lobe; **lip** purplish, bilaminate, pubescent, the blades elliptical-oblong, obtuse at the ends, 1.5 mm long, the connectives cuneate, the body broad, connate to the column at the base, the appendix short, thick, pubescent; **column** stout, 1.5 mm long, the anther apical, the stigma ventral.

**Norte de Santander:** epiphytic in cloud forest below Páramo de Jurisdicciones, alt. 2600 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10219* (MO); same area, alt. 2550 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10357* (MO); epiphytic in cloud forest near Alto de San Francisco, above Villacaro, alt. 2900 m, 11 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10260* (MO); Toledo, alt. 2500 m, collected by E. Valencia, 1992, flowered in cultivation at Colomborquídeas, 3 Jan 1993, *R. Escobar 5239* (MO).

**Santander:** between Santa Barbara and Guaca, alt. 2850 m, 14 May 1982, *C. Luer & R. Escobar 7858* (SEL); epiphytic in cloud forest, east of Bucaramanga toward Berlin, alt. 2700 m, 7 May 1984, *C. Luer, J. Luer, E. Valencia, E. Valencia & R. Escobar10160* (MO).

Also Venezuela (Táchira, *G. C. K. Dunsterville 1025*: AMES; Merida).

This variable species is confined to westernmost Venezuela and adjacent easternmost Colombia. In different populations, the size varies from less than five centimeters tall including elliptical leaves two and a half centimeters long, to seventeen centimeters tall including an ovate, acuminate leaf six centimeters long. In all populations, the raceme is congested and shorter than the leaf; the apex of the dorsal sepal is acuminate and reflexed; the lateral sepals are single-veined with the apices acuminate and diverging; the petals are simple, bilobed, and pubescent; and the lobes of the lip are oblong and pubescent with a short, thick appendix.

*Lepanthes reburra* Luer & Thoerle is also found in the Eastern Cordillera. The flowers are similar to those of *L. lasiopetala* in size and shape, but the lateral sepals are denticulate and the petals are only minutely pubescent.

**Lepanthes ligiae** Luer & R. Escobar, Orquideología 18(1): 56, 1991.

Ety.: Named in honor of Sra. Ligia Moreno de Posada who with her husband Jaime Posada has successfully cultivated this species at Colomborquídeas.

**Plant** large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 14-17 cm long, enclosed by 12-13 lepanthiform sheaths minutely ciliate on the ribs and margins. **Leaf** erect, coriaceous, prominently veined beneath, elliptical, acute, abruptly acuminate, 7-9 cm long, 2.5-3.5 cm wide, the base rounded, contracted into a petiole 5-7 mm long. **Inflorescence** a very congested, distichous, successively many-flowered raceme up to 18 mm long, borne behind the leaf by a slender peduncle 25-32 mm long; floral bracts 1-1.5 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** light yellow, glabrous, carinate, 3-veined, margins smooth, the dorsal sepal ovate-triangular, acute, 6.5 mm long, 3.5 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, diverging, subacute, shortly acuminate, 6.5 mm long, 3.25 mm wide, connate 2 mm; **petals** yellow with red inner edges, microscopically pubescent, transversely bilobed, 1 mm long, 4.75 mm wide, the lobes bent inward, narrowly oblong with rounded apices, subequal in size; **lip** orange with red outer margin, bilaminate, the blades ovate, acute at the apex, round at the base, 1.5 mm long, the connectives broadly cuneate, the body broad, connate to the column at the base, the appendix thick, pubescent, broadly triangular, concave,

with a minute, incurved apical lobule; **column** stout, 1.5 mm long, the anther dorsal, the stigma subapical.

**Antioquia:** El Retiro, epiphytic in forest above Fitzebad, alt. 1500-2400 m, collected by F. López, September 1983, flowered in cultivation by L. & J. Posada at Colomborquídeas, 17 July 1984, *R. Escobar 3309* (Holotype: MO), C. Luer illustr, 10389; Mesopotamia, alt. 2500 m, collected by F. López, flowered in cultivation by L. & J. Posada at Colomborquídeas, 3 June 1995, *C. Luer 17711* (MO).

This large species, so far known only from the forests in Antioquia around Fitzebad, is distinguished by the congested, short-pedicellate raceme; acute sepals; narrowly oblong petals; ovate lobes of the lip; and a thick, triangular appendix. Alone among the yellow-flowered, vegetatively large species of *Lepanthes* known from Colombia, *L. ligiae* has three-veined lateral sepals.

**Lepanthes lilliputae** Luer & R. Escobar, Orquideología 17(3): 208, 1988.

Ety.: Named for the fictional kingdom of miniscule proportions, Lilliput, in Jonathan Swift's Gulliver's Travels.

Syn.: *Lepanthes gnoma* Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 61: 91, 1996.
Ety: From the Latin *gnomus*, "a fabled dwarf," referring to the small size of the plant.

**Plant** minute, epiphytic, caespitose; roots proportionally thick. Ramicauls thin, erect, 3-19 mm tall, enclosed by 3-5 densely scabrous to ciliate lepanthiform sheaths. **Leaf** erect, thickly coriaceous, suffused with purple, elliptical, subacute, 5-11 mm long, 2-5 mm wide, the base cuneate into a 1 mm long petiole. **Inflorescence** a solitary flower or a successively 2-flowered raceme, borne behind the leaf by a filiform peduncle 5-7 mm long; floral bracts scabrous, 1 mm long; pedicels and ovary each 0.5 mm long; **sepals** translucent rose, glabrous, ovate, acute, carinate, 1-veined, margins smooth, the dorsal sepal 2.66 mm long, 1.66 mm wide, connate to the lateral sepals for ca. 0.33 mm, the lateral sepals diverging, 2.66 mm long, 1.33 mm wide, connate 0.75 mm; **petals** red, ciliate, transversely obscurely 3-lobed, 0.8 mm long, 1.33 mm wide, the outer margin obtusely angled at the middle, the upper and lower lobes subequal, obliquely triangular, obtuse; **lip** purple, bilaminate, the blades broadly oblong, obtuse, ciliate, 1 mm long, the connectives narrowly cylindrical, bearing the blades at the base, the body broad, connate to the base of the column, the rounded sinus with a thick, pubescent, uncinate appendix; **column** 1 mm long, the anther apical, the stigma ventral.

**Norte de Santander:** epiphytic in subpáramo cloud forest, Páramo de Jurisdicciones, alt. 3150 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10230* (Holotype: MO).
Also Ecuador (Carchi, holotype of *L. gnoma*, *A. Hirtz et al. 4936*: MO).

This minute species was found in abundance growing on only one scrubby subpáramo tree in association with *Masdevallia fragrans* Woolward in northeast Colombia. In northern Ecuador, it was later found in cloud forest at a similarly high altitude and described as *Lepanthes gnoma*. It is recognized by its minute size; thick, elliptical leaves; ovate, acute, smooth-margined, one-veined sepals; obscurely trilobed petals; and the lip with oblong blades attached at the bases to the connectives, and a proportionally large, thick, uncinate appendix. *Lepanthes vieirae* Luer & R. Escobar is another tiny Colombian species with a flower of similar proportions with single-veined lateral sepals, but with denticulate rather than smooth sepals, and petals with narrowly triangular upper lobes that are much longer than the triangular lower lobes.

**Lepanthes limbata** Luer & R. Escobar, Orquideología 19(2): 98, 1994.

Ety.: From the Latin *limbatus*, "bordered," referring to the margin of the leaf.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-23 mm long, enclosed by 3-5 microscopically ciliate lepanthiform sheaths. **Leaf** erect, with broad, crenulate-erose borders, coriaceous, ovate, subacute to obtuse, 7-10 mm long, 4-8 mm wide, the base rounded or

broadly cuneate, contracted into a petiole 0.5 mm long. **Inflorescence** a congested, distichous, successively few-flowered raceme, up to 2 mm long, borne behind the leaf by a filiform peduncle 3-6 mm long; floral bracts 0.5 mm long; pedicels 0.75 mm long; ovary 1 mm long; **sepals** light yellow, glabrous, carinate, long-caudate, margins microscopically denticulate, the dorsal sepal ovate, subacute, the blade 3 mm long, 2.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the apex contracted into a filiform cauda 3.5 mm long, the lateral sepals ovate, oblique, subacute, the blades 3 mm long, 2 mm wide, barely 2-veined, connate 1 mm, with the apices diverging, contracted into filiform caudae 4 mm long; **petals** purple, pubescent, transversely bilobed, 0.75 mm long, 2.25 mm wide, 1-veined, the lobes diverging, triangular, acute, with the upper lobe larger than the lower lobe; **lip** purple, bilaminate, the blades pubescent, elliptical oblong with the ends rounded, 1 mm long, the connectives short, broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse with the appendix oblong, truncate, in contact with the stigma; **column** 1 mm long, with the anther dorsal and the stigma ventral.

**Chocó:** above San José del Palmar, Alto de Los Galápagos, epiphytic in cloud forest, alt. 2050 m, 13 May 1993, *C. Luer, J. Luer, R. Escobar, A. de Wilde & J. Gómez 16807* (Holotype: MO); Cerro del Torrá, vertiente nororiental, arriba del helipuerto, bosque nublado primario muy rico, alt. 1920 m, 8 Jan. 1984, *P. Silverstone-Sopkin et al. 1639* (MO).

This rare species occurs as a twig epiphyte in a wet, windy pass between the departments of Chocó and Valle del Cauca. It is distinguished by its very small size and ovate leaves with well-defined, broad, crenulate-erose margins. The proportionally large, pale yellow, long-tailed flower with purple petals and lip is borne near the center of the back side of the leaf. The tiny plant with a spidery, long-caudate flower resembles *Lepanthes trimerinx* Luer in both respects, but the flowers of the latter have single-veined lateral sepals, an H-shaped lip without blades, and are borne beyond the leaves by a filamentous peduncle.

**Lepanthes linealis** Luer & R. Escobar, Orquideología 18(1): 58, 1991.

Ety.: Named for the vicinity of La Linea, between Ibague and Armenia, where the species was discovered.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls relatively stout, erect, 2-3.5 cm long, enclosed by 5-6 lepanthiform sheaths with ciliate ostia. **Leaf** erect, coriaceous, suffused with purple beneath, ovate, acute, 20-37 mm long, 9-14 mm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a loose, successively few-flowered raceme up to 2.5 cm long including the filiform peduncle 1 cm long; floral bracts 2 mm long; pedicels 1.75 mm long; ovary 2.5 mm long; **sepals** white, glabrous, ovate, acute, shortly acuminate, carinate, margins smooth, the dorsal sepal 4 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 4 mm long, connate 1.8 mm, 3.2 mm wide together, each 1-veined; **petals** red, pubescent, transversely bilobed, 0.6 mm long, 1.8 mm wide, the lobes obliquely triangular with rounded apices, with a small, obtuse angle on the outer margin near the middle; **lip** red, bilaminate, the blades essentially glabrous, ovate, the apices acute, the bases rounded, 1.2 mm long, the connectives broad and short, the body broad, connate to the column above the base, the appendix pubescent, broadly triangular with the apex biglandular; **column** slender, 1.5 mm long, the anther apical, the stigma ventral.

**Tolima:** epiphytic in cloud forest along the crest of La Linea, alt. 3280 m, collected by R. Escobar, flowered in cultivation at Colomborquídeas, 18 Mar. 1989, *C. Luer 14223* (Holotype: MO).
**Quindio:** pass between Salento and Tocha, alt. 3300 m, 10 May 1993, *C. Luer, J. Luer, R. Escobar & A. de Wilde 16749* (MO).

This species is known only from one cloud forest at a high altitude in the Central Cordillera. The loosely few-flowered raceme is shorter than the leaf. The small flowers are white with shortly acuminate sepals, and the lateral sepals are one-veined. The small petals are red with an obtuse angle on the outer margin. The tip of the triangular appendix is biglandular. *Lepanthes linealis* resembles another small member of *Lepanthes* subsect. *Breves*, *L. trifurcata* Luer & R. Escobar, but the latter is distinguished by petals with acutely triangular lobes with an equally

acute angle on the outer margin, and lateral sepals that are denticulate and acute, rather than smooth and shortly acuminate.

**Lepanthes lingulosa** Luer & R. Escobar, Orquideología 21(2): 149, 1999.

Ety.: From the Latin *lingulosus*, "with large tongue," referring to the rostellar flap.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-6 mm long, enclosed by 2-3 closely fitting, microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse to rounded at the apex, 6-9 mm long, 3.5-6 mm wide, the base broadly cuneate, contracted into a petiole less than 1 mm long. **Inflorescence** a loose, successively several-flowered raceme up to 5 cm long including the filiform peduncle 2-3 cm long, borne beyond the leaf; floral bracts muricate, 3 mm long; pedicels 3 mm long; ovary 2.5 mm long; **sepals** glabrous, membranous, spiculate-carinate, widely spread, margins irregularly ciliate, the dorsal sepal ovate, acute, concave below the middle, 6 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals narrowly ovate, oblique, acute, diverging slightly, 6 mm long, 2 mm wide, 2-veined, connate 2 mm; **petals** long-ciliate and pubescent with thin hairs, transversely bilobed, 1 mm long, 4.5 mm wide, the lobes narrowly triangular, obtuse; **lip** bilaminate, the blades minutely pubescent, irregularly long-ciliate, elliptical-oblong, 1 mm long, with rounded ends, the connectives cuneate, the body connate to the base of the column, the appendix narrowly oblong, 0.8 mm long, minutely pubescent, with a pedunculate apical process; **column** 1.5 mm long, the anther cap thin, elliptical, 1 mm long, lying upon the ovate, protruding rostellar flap, 1.25 mm long, 1.25 mm wide, the stigma ventral.

**Cundinamarca:** Sierra Loma, San Antonio de Tena, alt. 2620 m, collected Nov. 1993 by G. Ruiz Schnitter, *R. Escobar 5481* (Holotype: MO), C. Luer illustr. 17727.

This species, known from no other collection, was discovered in the Eastern Cordillera of Colombia. It was perfectly preserved in liquid but without color notes. The plant is very small, with slender ramicauls and elliptical leaves each less than one centimeter long. The loose, successively flowered raceme reaches about five centimeters in length. The flowers are proportionally very large for the plant. The sepals are acute with ciliate margins. The petals are transverse with narrowly triangular lobes and irregularly long-ciliate margins. The elliptical blades of the lip, also irregularly long-ciliate, are proportionally very small, smaller than the large, protruding rostellar flap.

**Lepanthes lycocephala** Luer & R. Escobar, Orquideología 16(2): 147, 1984.

Ety.: From the Greek *lycocephalos*, "wolf-headed," referring to the fancied appearance of the lip.

**Plant** small, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 5-15 mm long, enclosed by 4-5 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, margined, minutely erose, elliptical, subacute, 7-10 mm long, 5-6 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively few-flowered raceme, up to 3 mm long, borne behind the leaf by a peduncle 3 mm long; floral bracts 0.5 mm long; pedicels 0.5 mm long; ovary 1 mm long, lightly papillose; **sepals** rosy red, glabrous, spiculate-carinate externally along the veins, margins denticulate-fimbriate, caudate, the dorsal sepal concave, ovate, obtuse, 5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the obtuse apex abruptly acuminate into a cauda 1 mm long, the lateral sepals connate 3 mm into a transverse lamina 4.5 mm long, 5 mm wide, each 2-veined, the apices obtuse, abruptly contracted into diverging, narrow caudae 1 mm long; **petals** red, pubescent, transversely bilobed, 1 mm long, 4 mm wide, the upper lobe triangular, the lower lobe narrowly oblong, longer than the wider upper lobe; **lip** red, bilaminate, the blades ciliate, pubescent, obovate, 1.5 mm long, the apices broadly subtruncate, the bases acute, erect, the connectives obliquely cuneate, the body broad, connate to the base of the column, the sinus pubescent without a distinct appendix; **column** narrowly terete, 2 mm long, the anther apical, the stigma apical, transversely bilobed.

**Nariño:** epiphytic in cloud forest above Ricaurte, alt. 1600 m, 3 Nov 1979, *C. Luer, J. Luer, K. Walter & A. Hirtz 4626* (Holotype: SEL).

**Antioquia:** epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, et al. 17649* (MO).

**Chocó:** San José del Palmar, Cerro del Torrá, Río Negro below the heliport, alt. 1750 m, 14 Aug. 1988, *J. E. Ramos, P. Silverstone-Sopkin, L. H. Ramos, et al. 1203* (CUVC, MO), C. Luer illustr. 18462; above San José del Palmar, Alto de Los Galapagos, alt. 2100 m, 10 May 1993, *C. Luer 16740* (MO).

**Valle del Cauca:** Alto de Los Galápagos, at the pass between Valle del Cauca and Chocó, alt. 2050 m, 13 May 1993, *C. Luer et al. 16815* (MO).

Also Ecuador (Carchi, Imbabura).

This tiny species is distinguished by elliptical leaves with erose margins, and a proportionally large, red flower borne in a congested raceme shorter than the leaf. The margins of the sepals are denticulate. The apices of the lateral sepals are contracted into short tails. The apices of the blades of the lip are broadly subtruncate while the bases are acute and erect. The appendix is represented by a mass of long hairs. The effect of the pubescent, zoomorphic lip is completed by a pair of erect, acute lobes that resemble a pair of ears. The column is slender with an apical anther and a transversely bilobed stigma similar to those seen in *Platystele* Schltr., many species of *Pleurothallis* and most species of *Stelis*.

**Lepanthes macdougalii** Luer & Thoerle, Harvard Pap. Bot. 16(2): 331, 2011.

Ety.: Named in honor of J. M. Macdougal, collector of this species.

**Plant** medium in size, caespitose; roots slender. Ramicauls erect, slender, 4-25 cm long, enclosed by 4-13 close, glabrous lepanthiform sheaths minimally dilated at the ostia. **Leaf** erect, coriaceous, narrowly elliptical-ovate, acute, 4-8 cm long, 0.8-1.2 cm wide, suffused with purple beneath, the base cuneate into a petiole ca. 5 mm long. **Inflorescence** 1-2 loose, successively 4- to 8-flowered racemes, up to 4.5 cm long, borne before leaf by a peduncle 10-15 mm long; floral bracts 2-2.5 mm long; pedicels 2-2.5 mm long; ovary 1.5 mm long; flowers "yellow and red," **sepals** glabrous, carinate, margins smooth, the dorsal sepal ovate, acute, 6 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, 6 mm long, 2 mm wide, 1-veined, nearly free; **petals** transversely bilobed, the lobes oblong, apices obtuse, 0.8 mm long, 5 mm wide, the upper lobe minutely pubescent, slightly wider than the lower lobe; **lip** bilaminate, the blades minutely ciliate-pubescent, elliptical with obtuse ends, 2 mm long, the connectives cuneate, from the above the middle of the blade, the body connate to the column above the base, the sinus obtuse with a short, membranous, ciliate appendix; **column** slender, 2 mm long, the anther apical, the stigma ventral.

**Antioquia:** Mun. Urrao, Páramo de Frontino, between Llano Grande and Churrumblúm, alt. 3320-3500 m, 1 Mar. 1989, *J. M. Macdougal, F. J. Roldán & J. Betancur 4389* (Holotype: MO), C. Luer illustr. 21521.

This species, from a high altitude of the Western Cordillera of Colombia, is similar to *Lepanthes monoptera*. Narrowly elliptical leaves and one or two loosely flowered racemes about half as long are borne by considerably longer ramicauls with smooth, barely dilated sheaths. The sepals are acute and glabrous with smooth margins; the transversely lobed petals are oblong; the blades of the lip are elliptical; and the appendix is minute and membranous. Denticulate sepals, petals with usually triangular lobes, and a lip connate to the base of the column distinguish *L. monoptera.*

**Lepanthes macrantha** Garay, Canad. J. Bot. 34: 250, 1956.

Ety.: From the Greek *macrantha*, "large flowered," referring to the size of the flower.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 7-21 cm long, enclosed by up to 21 microscopically ciliate lepanthiform sheaths with long-acuminate apices. **Leaf** erect, coriaceous, elliptical-ovate, acute, long-acuminate, 5-8 cm long, 2-3.2 mm wide, the base rounded, contracted into a petiole ca. 1 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 15 mm long, borne behind the leaf by a filiform peduncle up to 15 mm long; floral bracts acute, oblique, 2 mm long; pedicels 3 mm long; ovary 3 mm long; **sepals** orange, glabrous,

carinate, margins smooth, the dorsal sepal broadly ovate, subacute, 8 mm long, 7 mm wide, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals broadly ovate, oblique, diverging, acute, 7.5 mm long, 7.75 mm wide together, each 2-veined, connate 3 mm; **petals** dark orange, microscopically ciliate, transversely bilobed, 1 mm long, 4 mm wide, with a minute setiform process on the outer margin between the lobes, the upper lobe oblong, 2.5 mm long, obliquely truncate, retuse, with the outer tip of the upper lobe thicker than the inner, the lower lobe narrowly falcate-triangular, acuminate, 1.5 mm long; **lip** dark orange, bilaminate, the blades semilunate, glabrous, slightly concave, adherent medially over the column, 2 mm long, with the ends obtuse, the connectives cuneate, the body connate to the base of the column, the sinus obtuse, with the appendix oblong, convex to concave, pubescent at the tip with a minute, bifid gland; **column** thick, 1.5 mm long, the anther dorsal and the stigma ventral.

**Norte de Santander:** Sarare, between Alto del Loro and Alto de Santa Inéz, alt. 1800-2200 m, 18-21 Oct. 1941, *J. Cuatrecasas, R. E. Schultes & E. Smith 12403* (Holotype: US; Isotype: COL); Santa Inéz, alt. 2050 m, 23 May 1982, *C. Luer & R. Escobar 7932* (SEL); epiphytic in cloud forest, Alto de Santa Inéz, alt. 2100 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10303* (MO); same area, alt. 2150 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10348* (MO).

Aptly named, the flower of this species from the Eastern Cordillera is large. The long ramicauls are proportionally slender, with long-acuminate lepanthiform sheaths. The large, flat, orange flowers are produced successively in a congested, ever-lengthening raceme. The petals have a minute marginal process. The blades of the lip adhere over the column, with an oblong appendix that is convex below the middle and concave above. The even larger *L. gargantua* produces superficially similar flowers, but the petals with an oblong, rounded upper lobe lack the characteristic apiculum between the lobes.

**Lepanthes macrostylis** Luer & R. Escobar, Orquideología 21(2): 151, 1999.

Ety.: From the Greek *makrostylos*, "a large column," referring to the gynostemium.

Syn.: *Lepanthes guaduasensis* Luer & R. Escobar, Orquideología 21(2): 145-147, 1999.

Ety.: Named for the community of Guaduas in the department of Guaduas, where the species was collected.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3.5-6 cm long, enclosed by 7-8 microscopically scabrous, closely fitting lepanthiform sheaths with acuminate apices. **Leaf** erect, purple, coriaceous, ovate, acute, 22-30 mm long, 12-14 mm wide, the base cuneate, contracted into a petiole ca. 1 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 6 mm long, borne behind the leaf by a filiform peduncle 7-11 mm long; floral bracts spiculate, 1-1.5 mm long; pedicels 1-1.5 mm long; ovary 1.5 mm long; **sepals** yellow with a broad, purple, central stripe, glabrous, membranous, carinate, more or less reflexed, margins smooth, the dorsal sepal ovate, acute, 3 mm long, 2.2 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, diverging, acute, 3.2 mm long, 1.5 mm wide, 2-veined, connate 1 mm; **petals** purple, microscopically pubescent, transversely bilobed, 0.6 mm long, 2.2 mm wide, the lobes ovate, obtuse, with the tip of the upper lobe narrowed or acuminate; **lip** purple, bilaminate, the blades thick, microscopically pubescent, ovate, 1 mm long, with the bases rounded, the apex narrowed and recurved beneath the column, the connectives broadly cuneate, the body connate to the base of the column, the sinus obtuse, with an oblong, pubescent appendix; **column** thick, cylindrical, 1.5 mm long, the anther and the stigma apical.

**Antioquia:** Pabón, epiphytic in forest along a stream toward Santa Ana, alt. 2050 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17672* (Holotype: MO); Urrao, Pabón, Las Cruces, alt. 2400 m, collected by E. Valencia, 23 May 1984, flowered in cultivation at Colomborquídeas, 9 July 1984, *R. Escobar 3298* (MO), C. Luer illustr. 11528.

**Chocó:** Carmen de Atrato, Guaduas, collected by E. Valencia, 1990, flowered in cultivation at Colomborquídeas, 17 February 1991, *R. Escobar 5242* (holotype of *L. guaduasensis*: MO), C. Luer illustr. 16562.

This species from the Western Cordillera of Colombia resembles *Lepanthes zapatae*. Both species are characterized by a short, congested raceme borne behind

the small leaf. The leaf of *L. macrostylis* is ovate and purple instead of elliptical and green; the petals are proportionally smaller with ovate lobes rather than large with ovate-triangular lobes at least as wide as a sepal is long. The column is proportionally very large and protrudes beyond the thick, convex lobes of the lip.

**Lepanthes manabina** Dodson, Icones Pl. Trop. 128, 1980.

Ety.: Named for the province of Manabi where the species was collected.

Syn.: *Lepanthes mastodon* Luer, Phytologia 54: 352, 1983.
Ety.: Named for the elephant-like Mastodon, referring to the tusklike tails of the lateral sepals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls suberect to erect, slender, 2-10 cm long, enclosed by 4-12 minutely pubescent lepanthiform sheaths, markedly dilated and acuminate at the ostia. **Leaf** dark green, purple beneath, more or less reticulate, suberect to horizontal, coriaceous, microscopically pubescent, sulcate between convex halves, ovate, 2-6 cm long, 1.5-2.2 cm wide expanded, the apex acuminate, acute, the base broadly cuneate or rounded, sessile. **Inflorescence** a congested, subsecund, successively many-flowered raceme up to 22 mm long, borne by a filiform peduncle 5-12 mm long, lying in the sulcus of the dorsum of the leaf; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 2.5 mm long; **sepals** purple-black or dark red-brown, with or without yellow or green margins, glabrous, ovate, obtusely acuminate into caudae, carinate-spiculate along the veins, margins ciliate, the dorsal sepal concave, 6 mm long, 3.5 mm wide expanded, 3-veined, the lateral sepals oblique, 6 mm long, 2 mm wide, connate 2 mm, with incurved caudae 4-6 mm long, 2-veined; **petals** green, yellow or purple, minutely pubescent, transversely oblong-bilobed, 1.25 mm long, 4.25 mm wide, the upper lobe oblong, obtuse, the lower lobe narrowly triangular, oblique, obtuse; **lip** metallic greenish brown, bilaminate, the blades oblong, 2 mm long, minutely ciliate, the connectives cuneate, the body broad, connate to the column above the base, the appendix a small triangle in the sinus; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** epiphytic in forest along the stream near the abandoned copper mine above La Ceja, alt. 2400 m, 16 Apr. 1988, *C. Luer, J. Luer, R. Escobar, M. Robledo, O. Robledo & W. Teague 13190* (MO); epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2430 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17695* (MO); Medellín, corregimiento de Altavista, vereda Aguas Frias, alt. 2300-2350 m, 15 June 1997, *L. F. Giraldo 1462* (JAUM).

**Risaralda:** Santa Rosa de Cabal, alt. unknown, flowered in cultivation at "El Jordan," 24 Nov. 1992, *A. de Wilde 4410* (MO).

**Nariño:** epiphytic in cloud forest east of Ricaurte, alt. 1800 m, 1 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4521* (SEL); epiphytic in cloud forest above Ricaurte, alt. ca. 1600 m, 3 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4590* (SEL); Ricaurte, alt. 1600 m, collected by E. Valencia, 1990, flowered in cultivation at Colomborquídeas, 27 Dec. 1992, *R. Escobar 5082* (MO).

Also Ecuador (Manabi, Holotype, *Luer et al. 3381*: SEL; Carchi; Imbabura).

This species is widely distributed in Colombia and northern Ecuador. *Lepanthes manabina* is recognized by the metallic greenish-brown flower resting in the sulcus of a convex leaf. The lepanthiform sheaths are markedly dilated and acuminate at the apex. The apices of the sepals are acuminate-caudate, often incurved like elephant tusks; the petals are transverse with a proportionally large upper lobe; the blades of the lip are oblong; and the appendix is triangular in the sinus of the body. The similarly dull-colored flowers of *L. cincinnata* are also borne in the deep sulcus of a dark green leaf, but have flat sepals and a lip with a tridentate apex.

**Lepanthes maria-victoriae** Luer & Thoerle, Harvard Pap. Bot. 16(2): 331, 2011.

Ety.: Named in honor of Maria Victoria Posada, of the renowned Colomborquídeas.

**Plant** large, epiphytic, rhizome and roots unknown. Ramicauls stout, erect, ca. 19 cm tall, enclosed by ca. 13 densely long-ciliate lepanthiform sheaths, acuminate at the ostia. **Leaf** suffused with purple beneath, coriaceous, ovate, acute, slightly acuminate, 10 cm long, 3 cm wide, the base rounded,

abruptly contracted into a petiole 5 mm long. **Inflorescence** 1-2 congested, successively many-flowered racemes, up to 7 cm long including the peduncle 1.5-2 cm long, borne behind the leaf; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 2.5 mm long; **sepals** white to cream, glabrous, margins very shortly denticulate, dorsal sepal broadly to transversely ovate-triangular, obtuse, shortly acuminate, 5.5 mm long, 6 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, diverging widely, obtuse, shortly acuminate, 5 mm long, 4 mm wide, 2-veined, connate 2 mm to each other; **petals** orange with red margins, glabrous to microscopically pubescent, transversely bilobed, oblong with ends rounded, 1 mm long, 3.25 mm wide, the upper lobe 2 mm long, 1 mm wide, the lower lobe 1.25 mm long, 0.75 mm wide; **lip** red, bilaminate, the blades ovate, 2 mm long, acute at the apex, rounded at the base, glabrous, the connectives triangular, cuneate, the body narrow, connate to the base of the column, the appendix external, narrowly linear, subclavate, decurved; **column** stout, 1.75 mm long, the anther apical, the stigma ventral.

**Antioquia:** La Unión, Alto de San Miguel, collector unknown, flowered in cultivation at Colomborquídeas, 14 June 2009, *L. Thoerle 139* (Holotype: MO), C. Luer illustr. 21483.

This species, known from a single collection from the Alto de San Miguel in Antioquia, is characterized by a large size with congested, successively flowered racemes that are shorter than and borne behind a large, acute leaf. The white sepals are broad, obtuse, and shortly acuminate, the laterals semiconnate; the colorful petals are transversely oblong with rounded ends; and the blades of the lip are ovate with narrowly cuneate connectives. The appendix is minute and digitiform. *Lepanthes medusa* Luer & R. Escobar, from neighboring Abejorral, another species with flowers with pale sepals and colorful petals, is distinguished by larger flowers with petals with long, narrow lobes.

**Lepanthes marthae** Luer & R. Escobar, Orquideología 18(1): 60, 1991.

Ety.: Named in honor of Sra. Martha Posada de Robledo, who, with Sra. Ligia Moreno de Posada, discovered this species.

**Plant** small, epiphytic, caespitose; roots coarse. Ramicauls erect, slender, 3-4 cm long, enclosed by 4-5 coarsely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple, elliptical, acute, 20-28 mm long, 6-9 mm wide, the base cuneate into a petiole about 1 mm long. **Inflorescence** a loose, distichous, successively few-flowered raceme up to at least 30 mm long, borne beyond the leaf by a slender peduncle 10-15 mm long; floral bracts 2 mm long; pedicels 1.5-2 mm long; ovary 1.5 mm long; **sepals** translucent yellow, mottled with red between the veins, glabrous, margins smooth, the dorsal sepal broadly ovate-triangular, concave, 8 mm long, 6 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the apex subacute, shortly acuminate, the lateral sepals connate 5 mm into a broadly ovate synsepal, 8.5 mm long, 7.5 mm wide, each 2-veined, the apices diverging, subacute, shortly acuminate; **petals** orange, red at the base, cellular-glandular, transversely bilobed, 1.5 mm long, 6 mm wide, the lobes narrowly triangular, the upper lobe narrowly obtuse, the lower lobe slightly smaller, acute; **lip** orange with red edges, bilaminate, the blades ovate, concave near the base, pubescent, the apices narrowly obtuse, the bases rounded, 1.8 mm long, the connectives narrow, from the base, the body narrow, connate to the column above the base, the sinus obtuse with a minute, ovoid, bisegmented appendix; **column** 2 mm long, the base dilated, the anther apical, the stigma ventral.

**Antioquia:** Mun. Urrao, Chuzcal, alt. 2200 m, collected by M. Robledo & L. Posada, July 1987, flowered in cultivation at Colomborquídeas, Aug. 1989, *J. M. Munera & R. Escobar 160* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 14418.

This species resembles *Lepanthes effusa*, which is widely encountered in Ecuador and Colombia. *Lepanthes marthae* is distinguished from *L. effusa* by coarse rather than slender roots, and coarsely pubescent rather than minutely ciliate lepanthiform sheaths. Most distinctively, the petals of *L. marthae* join the column above its dilated base. Both share a lip with blades supported from their bases by narrow connectives, slanting backward from the bases of the blades.

## **Lepanthes matisii** Luer, Thoerle & P. Ortiz, Orchid Digest 75(1): 28-31, 2011.

Ety.: Named in honor of Francisco Xavier Matís Mahecha, an artist of the Real Expedición Botánica del Nuevo Reino de Granada, 1783-1808, who first illustrated this species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-25 mm tall, enclosed by 4-5 close, microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 15 mm long, 8 mm wide, the base cuneate into a subpetiolate base. **Inflorescence** a loose, successively few-flowered raceme, borne far above the leaf by a slender, erect peduncle 25-30 mm long; floral bracts 1.5 mm long, minutely ciliate; pedicels 4 mm long; ovary 1 mm long; **sepals** yellow to orange, the inner halves of the lateral sepals suffused with red, glabrous, margins smooth, the dorsal sepal broadly ovate, obtuse, shortly acuminate, 7-8 mm long, 6.5-7.5 mm wide, 3-veined, connate to the lateral sepals for 3 mm, the lateral sepals ovate, oblique, obtuse, connate 5 mm into broad, bifurcate synsepal 7.5 mm long, 9 mm wide, each 2-veined; **petals** yellow to orange, pubescent, transversely bilobed, 1 mm long, 4 mm wide, the upper lobe oblong, obtuse, 1.75 mm long, 1 mm wide, the lower lobe oblong, obtuse, 2.25 mm long, 0.5 mm wide; **lip** red, bilaminate, the blades convex, oblong, rounded at the ends, 1.3 mm long, long-ciliate at the apex, the connectives narrow, from below the middle, the body narrow, connate to the base of the column, the appendix narrowly oblong; **column** stout, barely 1 mm long, the anther apical, the stigma ventral.

**Cundinamarca:** Chia, northeast of Bogotá, alt. 2750 m, 11 June 2009, *L. Thoerle, P. Ortiz & J. Pfahl 106* (Holotype: HPUJ); limite entre Santander y Boyacá, Virolín, Finca La Sierra, alt. 2500-2600 m, May 13 1976, *G. Lozano et al. 2446* (COL); Usaquen, alt. 3000 m., Nov. 12, 1995, *P. Ortiz 1154* (HPUJ); La Calera, Vereda San José, alt. 2885 m, June 16 2010, *R. Moreno & L. Sanchez s.n.* (HPUJ).

This species is faithfully illustrated at life size and in full color in Mutis's Flora de la Real Expedición Botánica al Nuevo Reino de Granada, where it is misidentified as *Lepanthes costata* Rchb. f. In his description of *L. costata*, Reichenbach states that the sepals are long-caudate with elegantly denticulate margins, which does not apply to the present species, still without a name at that time. In recent years, this species has been found near Bogotá, at relatively high altitudes of at least 2500 meters. In the deeply shaded glades where *L. matisii* grows, it is plentiful on the moss-covered horizontal branches of smaller trees, often favoring the undersides of the branches.

*Lepanthes matisii* is distinguished by a small size with obtuse, elliptical leaves surpassed by a capillary peduncle which bears proportionally large, flat, yellow to orange flowers in slow succession. The broadly obtuse sepals are tailless; the much smaller petals are transverse; the apices of the blades of the lip are exceedingly long-ciliate; and the appendix is narrowly elongate.

In general shape and color, the flower is similar to that of *Lepanthes escobariana*, but the flower of *L. matisii* is about half the size and flat rather than cup shaped. It more closely resembles the rarely seen *L. amplior*, sharing the small size of the plant and the relatively large, flat flower of similar color. The flower of *L. amplior* is half again as large, with petals with a longer, slightly everted lower lobe, and a lip with blades much longer than the column.

## **Lepanthes medinae** Luer & Thoerle, Harvard Pap. Bot. 16(2): 332, 2011.

Ety.: Named in honor of Ramiro Medina of San Francisco, Putumayo, who collected this species.

**Plant** large, epiphytic, caespitose; rhizome and roots unknown. Ramicauls stout, erect, 24 cm tall, enclosed by ca. 16 lepanthiform sheaths, acuminate at the ostia. **Leaf** erect, coriaceous, ovate, acute, slightly acuminate, 24 cm long, 4 cm wide, the base broadly rounded to subcordate, abruptly contracted into a petiole 5 mm long. **Inflorescence** a congested, successively many-flowered raceme, up to 15 mm long, borne behind the leaf by a slender, erect peduncle 30-35 mm long; floral bracts 1.5 mm long; pedicels 1.5 mm long; ovary 2 mm long; **sepals** yellow, glabrous, margins smooth, dorsal sepal ovate, acute, acuminate, 7.5 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals pink, suffused with rose centrally, ovate, oblique, obtuse, acuminate, connate 2 mm into a broad, bifurcate, cordate synsepal 7.5 mm long, 7 mm wide, each 2-veined; **petals** orange, upper lobe

with red margin, shortly pubescent, transversely bilobed, oblong with ends rounded, 1.5 mm long, 3 mm wide, the lobes equal, 1.5 mm long, 1.5 mm wide; **lip** rose with bright pink margins, bilaminate, the blades ovate, narrowly obtuse at the apex, rounded at the base, 1.5 mm long, with the distal half edged with dense, long, spindle-shaped cilia, the connectives and body broad, connate to the base of the column, the appendix bilobed; **column** stout, 1.5 mm long, the anther apical, the stigma ventral.

**Putumayo:** collected and cultivated in San Francisco by R. Medina 645, 7 June 2009, *L. Thoerle 114* (Holotype: MO), C. Luer illustr. 21464.

*Lepanthes medinae* is apparently endemic in southern Colombia. It is characterized by a large size with ovate leaves that are slightly acuminate at the apex and subcordate at the base. The peduncle and the congested raceme do not quite reach the middle of the leaf. The sepals are acute with the laterals semiconnate, and the petals are transversely oblong with broad equal lobes. The lip is most remarkable, with the outer margins of the blades edged with a dense row of fluorescent pink, long, spindle-shaped cilia above the middle, and abruptly shortly pubescent below the middle. The minute appendix is bilobulate.

**Lepanthes medusa** Luer & R. Escobar, Orquideología 18(1): 64, 1991.

Ety.: Named for the mythological Gorgon Medusa with snakes for hair, in allusion to the long lobes of the petals.

**Plant** large, epiphytic, caespitose; roots coarse. Ramicauls erect, stout, 14-18 cm long, enclosed by 11-12 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, shortly acuminate, rugose between veins on the under surface, 8-10 cm long, 3.5-4 cm wide, the base rounded, contracted into a twisted petiole 3-4 mm long. **Inflorescence** a very congested, successively many-flowered raceme up to 10 mm long, borne along the back surface of the leaf by a slender peduncle 3.4-4 cm long; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** light yellow, glabrous, subcarinate, margins smooth, the dorsal sepal ovate, acute, 10 mm long, 5 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals broadly ovate, oblique, diverging widely, obtuse, shortly acuminate, 9 mm long, 5 mm wide, connate 3.5 mm, 2-veined; **petals** yellow-orange, minutely pubescent, transversely bilobed, 1.5 mm long, 12 mm wide, the lobes filiform, narrowly tubular with revolute margins, the upper lobe yellow, 8 mm long, the lower lobe purple, 4.5 mm long; **lip** dark orange with purple margins, glabrous, bilaminate, the blades narrowly ovate, with the apices and bases narrowly rounded, 2.5 mm long, the connectives cuneate, the body connate to the base of the column, the sinus with a minute, 4-lobed appendix; **column** stout, 2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Abejorral, obtained from R. Escobar by J & L Orchids in 1984, 284-162, flowered in cultivation at Colomborquídeas, 5 Mar. 1989, *C. Luer 14098* (Holotype: MO; Isotype: JAUM).

This species was originally imported by J & L Orchids in Easton, Connecticut, from Rodrigo Escobar in 1984, and subsequently a division of the plant was returned to Colombia and cultivated at Colomborquídeas. Unfortunately, the collection data have been lost.

Vegetatively, *Lepanthes medusa* is similar to many other large, robust species. The unusually large flowers are produced successively in a very congested raceme along the rough back surface of the leaf. The larger flower and the conspicuous elongated, colorful lobes of the petals, often entwined above and below the column, distinguish this species from the similar *Lepanthes maria-victoriae*.

**Lepanthes mefueënsis** Luer & R. Escobar, Orquideología 17(3): 212-215, 1988.

Ety.: Named for the Alto de Mefué, where this species was discovered.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-5 cm long, enclosed by 7-9 long-ciliate lepanthiform sheaths with dilated ostia. **Leaf** erect, coriaceous, elliptical, acute, 20-23 mm long, 8-10 mm wide, the base cuneate into the 2-3 mm long petiole. **Inflorescence** a dense, distichous, successively several-flowered raceme up to 5 mm long, borne behind the leaf by a filiform

peduncle 5-8 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 1.5 mm long; **sepals** red-purple with a thin, yellow margin, carinate, margins smooth, the dorsal sepal minutely pubescent within, elliptical, 2.75 mm long, 1.8 mm wide, 3-veined, connate to the lateral sepals for 0.25 mm, the subacute to obtuse apex abruptly acuminate, the lateral sepals glabrous, ovate, oblique, diverging, acute, 3 mm long, 1.2 mm wide, 1-veined, connate 1 mm; **petals** yellow-orange, microscopically pubescent, transversely bilobed, 0.25 mm long, 2.6 mm wide, the lobes narrowly oblong, obtuse, sub-equal, the lower slightly wider; **lip** red with a yellow-orange border, sub-bilaminate, the lobes cuneate with thick, ovate, blade-like margins with rounded ends, 1.2 mm long, microscopically pubescent, the body broad, connate to the base of the column, the sinus obtuse with a minute, filiform, reflexed, appendix; **column** stout, 1 mm long, the anther and stigma apical.

**Norte de Santander:** Toledo, epiphytic in cloud forest, Alto de Mefué, alt. 2600 m, 12 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10296* (Holotype: MO).

This little species is similar to the pleomorphic *Lepanthes aquila-borussiae*, which is frequently encountered at high elevations in the Eastern Cordillera of Colombia and adjacent Venezuela. *Lepanthes mefueënsis* differs with smooth-margined rather than denticulate sepals, the laterals with one vein rather than two; and the lip with a filiform, deflexed appendix.

**Lepanthes meleagris** Luer & R. Escobar, Orquideología 19(2): 99, 1994.

Ety.: From the Greek *meleagris,* "a peacock," referring to the colors of the petals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls very slender, erect to sub-erect, 4-17 cm long, enclosed by 8-13 closely fitting, ciliate lepanthiform sheaths with long-acuminate apices. **Leaf** suffused with purple, suberect, horizontal to drooping, thinly coriaceous, with the margins sometimes narrowly revolute, ovate, acute, acuminate, 5-8 cm long, 1.2-2.2 cm wide, the base rounded to broadly cuneate, contracted into a petiole 2 mm long. **Inflorescence** a very congested, secund, successively many-flowered raceme with overlapping pedicels, up to 35 mm long, borne on top of the leaf by a filiform peduncle 7-20 mm long; floral bracts acuminate, muriculate, 1.5 mm long; pedicels 2 mm long; ovary 2 mm long; **sepals** translucent pale yellow, glabrous, subcarinate, the dorsal sepal with margins smooth, broadly ovate, subacute, 3 mm long, 2.3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals connate 1.75 mm into an ovate, obtuse, shortly bifid synsepal, with margins smooth to minutely ciliate, 2.3 mm long, 2.6 mm wide, each 2-veined; **petals** multicolored with purple on the outer edge, with green beneath, yellow and red at the base, minutely pubescent, transversely bilobed with a minute marginal lobule between the lobes, 1 mm long, 3.3 mm wide, the upper lobe ovate, obtuse, the lower lobe smaller, long-ciliate, triangular, narrowly obtuse; **lip** red-purple, bilaminate, the blades glabrous, thin, transparent, flat, semilunate, adherent medially over the column, 1.3 mm long, the connectives narrowly oblong, from above the middle of the blades, the body replaced by a cuneate flap beneath the column, connate to the base of the column, the appendix external, oblong, concave, thickened at the apex; **column** 1.5 mm long, with the anther dorsal and the stigma ventral.

**Risaralda:** Pueblo Rico, Alto de Linea, epiphytic in cloud forest, alt. 2100 m, 11 May 1993, *C. Luer, J. Luer, R. Escobar & J. Gómez 16782* (originally cited as *167821*) (Holotype: JAUM; Isotype: MO); same area, collected by E. Valencia, April 1993, flowered in cultivation at Colomborquídeas, 5-9 May 1993, *C. Luer 16711* (MO).

**Antioquia:** epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2430 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17692* (MO).

This species, known only from one area of cloud forest in the Western Cordillera, closely resembles *Lepanthes parmata* Luer & R. Escobar. Both species share thin ramicauls; thin, purplish leaves; and a congested inflorescence with long, overlapping pedicels. The flowers of *L. parmata* are considerably larger, but the lip is considerably smaller than that of *L. meleagris*. The petals of *L. meleagris* are multicolored, with the margins dark purple with a layer of green below. This blends into yellow before the base is suffused with red. In both species, the blades of the lips are thin, translucent, more or less lunate, and adherent medially over the

column. The narrow connectives of *L. meleagris* originate above the middle of the column rather than from the base, and the body is modified with a wedge-shaped lamina above the external, oblong appendix.

**Lepanthes micellilabia** Luer & R. Escobar, Orquideología 19(2): 11-102, 1994.

Ety.: From the Latin *micellilabia*, "with a microscopic lip," referring to the size of the labellum.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-6 cm long, enclosed by 5-6 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, 14-20 mm long, 8-11 mm wide, the rounded base contracted into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, ca. 10 mm long, borne by a slender peduncle 3 mm long; floral bracts acute, lightly muricate, 0.5 mm long; pedicels 2 mm long; ovary 1 mm long; **sepals** pale yellow, suffused with red-purple medially, flat, glabrous, margins smooth, the dorsal sepal ovate-triangular, acute, 2.5 mm long, 1.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging widely, acute, 2.5 mm long, 1.25 mm wide, 2-veined, connate at the base; **petals** minute, red with yellow margins, microscopically cellular-pubescent, transversely bilobed, oblong, 0.25 mm long, 0.5 mm wide, the lobes about equal in size and shape, circular, with a minute marginal tooth on the lateral margin between the lobes; **lip** extremely minute at the base of the column, cordate, acute, microscopically pubescent, 0.25 mm long and broad; **column** proportionally large, red, terete, 1.5 mm long, the anther and stigma apical.

**Antioquia:** Mun. La Ceja, Río Piedras, alt. 2400 m, collected by D. Arbelaz et al., 1990, flowered in cultivation at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5191* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16564.

This small species possesses one of the smallest lips known in the genus. It is cordate, microscopically pubescent, and measures 0.25 millimeters long and wide. Practically invisible within the flower, it sits at the base of the underside of a proportionally large, long, cylindrical column protruding from the center of the small, widely spread flower. Flanking the base of the column on either side is a minute, obscurely bilobed petal measuring 0.3 millimeters by 0.75 millimeters.

Another small Colombian species, *Lepanthes eros*, shares the small, widely expanded flowers with a minute lip and a protruding, terete column, but is distinguished by larger petals, longer than each single-veined sepal. The two similar Ecuadorian species can be readily distinguished from these Colombian species: the monstrous column of *L. pelorostele* is flanked by tiny, trilobed, filiform petals; and *L. rigidigitata* has a prolific habit.

**Lepanthes micronyx** Luer & R. Escobar, Orquideología 20(3): 302-304, 1997.

Ety.: From the Greek *micronyx*, "a tiny claw," referring to the appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls very slender, weak, erect, 7-9 cm long, enclosed by 12-14 microscopically scabrous, tightly fitting lepanthiform sheaths with acuminate apices. **Leaf** spreading, thinly coriaceous, narrowly ovate, acute, long-acuminate, 25-42 mm long, 7-12 mm wide, the base cuneate, contracted into a petiole less than 1 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 5 mm long, borne on top of the leaf by a filiform peduncle 5-20 mm long; floral bracts 1-1.5 mm long; pedicels 1-1.5 mm long; ovary 1 mm long; **sepals** translucent yellow, glabrous, membranous, carinate, widely spread, margins smooth, the dorsal sepal broadly ovate, obtuse, 2 mm long, 1.75 mm wide, 3-veined, connate to the lateral sepals for 0.4 mm, the lateral sepals broadly ovate, oblique, diverging slightly, obtuse, 1.75 mm long, 1 mm wide, 2-veined, barely connate at the base; **petals** yellow-green, microscopically cellular, transversely bilobed, 0.5 mm long, 2.25 mm wide, the upper lobe oblong, truncate, the lower lobe narrowly triangular, acute; **lip** yellow, bilaminate, the blades microscopically cellular, ovate, 0.6 mm long, rounded at the bases, acute at the apices, the connectives narrowly cuneate, the body narrow, connate to the base of the column, the sinus obtuse, with a minute, decurved, glabrous, talon-like appendix, cleft centrally; **column** 0.75 mm long, the anther dorsal and the stigma apical.

**Antioquia:** epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17648* (Holotype: MO).

This species is apparently endemic in a mountain pass in the Western Cordillera of Colombia. It is characterized by a weak, very slender ramicaul with a long-acuminate leaf. The congested racemes are borne on top of the leaf, often two simultaneously with peduncles of unequal length, as is seen in the common *Lepanthes mucronata*. The flowers of *L. micronyx* are very small with sepals two millimeters or less long. The petals are transversely bilobed with the upper lobes oblong and the lower lobes triangular. The ovate blades of the lip are minute, 0.6 millimeters long, considerably smaller than the column they flank. The appendix is shaped like a microscopic, decurved talon.

The Ecuadorian *Lepanthes sororcula* Luer & Hirtz shares the slender, weak ramicauls; thinly coriaceous leaf; flowering habit; and small flowers with pale sepals. While the upper and lower lobes of the petals of both are similar, a long, slender marginal process descends from between the lobes of *L. sororcula.*

**Lepanthes microscopica** Luer & R. Escobar, Amer. Orchid Soc. Bull. 52(12): 1268, 1983.

Ety.: From the Latin *microscopicus,* "microscopic," in allusion to the size of the flowers.

**Plant** very small, epiphytic, caespitose; roots fine. Ramicauls slender, erect, 10-22 mm long, enclosed by 6-8 close, microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse to subacute, 10-13 mm long, 4-5 mm wide, the base cuneate into the 1 mm long petiole. **Inflorescence** a congested raceme up to 5 mm long, borne by a filiform peduncle 2-7 mm long behind the leaf; floral bracts 0.75 mm long; pedicels 1 mm long; ovary 0.5 mm long; **sepals** translucent white, glabrous, free, reflexed, subequal, ovate, acute, margins smooth, 1.25 mm long, 0.9 mm wide, dorsal sepal 3-veined, lateral sepals diverging widely, 2-veined; **petals** red, microscopically pubescent, more or less transversely oblong, multangular, 0.5 mm long, 1.3 mm wide, the upper lobe oblong, obtusely angled on the inner margin, the lower lobe truncate, subquadrate; **lip** red, microscopically pubescent, bilobed, H-shaped, the lobes flat, oblique, elliptically oblong, 1 mm long, 1 mm wide, the ends rounded, with a minute, obtuse appendix in the sinus between the lobes, the base connate to the base of the column; **column** cylindrical, 0.8 mm long, the anther and stigma apical.

**Antioquia:** Mun. Frontino, Alto de Cuevas, alt. 2050 m, 14 May *1983, R. Escobar & E. Valencia 2598* (Holotype: SEL), C. Luer illustr. 9095; same locality, 12 April 1974, R. Escobar et al., flowered in cultivation by M. & O. Robledo, 26 June 1974, *R. Escobar 1264* (JAUM).

This little species produces one of the smallest flowers in the genus. The free, reflexed sepals are scarcely more than 1 mm long. The equally large petals are multangular. The flat, H-shaped lip is attached to the base of the cylindrical column. While there are other small Andean species bearing small flowers with reflexed sepals, none also share this unusual lip.

**Lepanthes mirabilis** Ames, Sched. Orch. 1:12, 1922.

Ety.: From the Latin *mirabilis*, "wonderful," presumably for the extraordinary flower.

**Plant** very small, epiphytic, caespitose; roots coarse. Ramicauls slender, erect, 10 mm long, enclosed by 2 minutely scabrous, oblique lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly elliptical, marginate, acute, 8-11 mm long, 4-5 mm wide, the base cuneate, contracted into a petiole ca. 1 mm long. **Inflorescence** up to 22 mm long, including a congested, successively ca. 8-flowered raceme 5-8 mm long, the flowers ca. 1 mm apart, borne beyond the leaf by a slender peduncle; floral bracts acute, estimated 1 mm long; pedicels 1 mm long; ovary estimated 1 mm long; flowers pale yellow; **sepals** glabrous, membranous, smooth-margined, connate basally, abruptly long-caudate, the dorsal sepal triangular, subacute, 6.8 mm long including the cauda, the blade ca. 2.5 mm long, 3 mm wide at

the base, 3-veined, the cauda slender, 4 mm long, the lateral sepals broadly ovate, oblique, diverging, subacute, 7 mm long including the cauda, the blades 4 mm long, 2.5 mm wide, 2-veined (1-veined according to the description), connate to near the middle, contracted into a slender cauda 3 mm long; **petals** elliptical, slightly acuminate, acute, noted as "denticulate" on the type sheet, orientation horizontal in the drawings on the herbarium sheet, likely vertical in life, nearly 2 mm long, 0.5 mm wide, without a vein, either 1-lobed or with a tiny, vestigial lower lobe; **lip** bilaminate, the blades narrowly linear-triangular, acute, acuminate, probably not divaricate in the living flower, 2 mm long, 0.5 mm wide above a medial, basal angle, the connectives narrow, the body narrow, connate to the base of the column, the sinus obtuse, the appendix linear-oblong, subacute, less than 0.5 mm long; **column** oblong, ca. 1 mm long.

**Cauca:** Córdoba, Dagua Valley, Pacific Coastal Zone, alt. 30-100 m, Dec. 1905, *H. Pittier 592*, (Holotype: US), C. Luer illustr. 21664.

This tiny species, collected near sea level in the coastal zone of Cauca over a century ago, is rare, not yet having been collected again. The yellow flowers of *Lepanthes mirabilis* are much larger than the minute leaves, with broad, ovate, smooth-margined sepals with slender tails. The accompanying description and illustration were made from the original description and the two sketches on the type sheet, one by Oakes Ames and the other by Charles Schweinfurth. In the figure herein, an illustration of the flower as it probably appears in life accompanies a copy of Schweinfurth's drawing to illustrate differences in interpretation.

Having been made from a rehydrated flower, the original drawings are remarkably good. However, rehydrated flowers are frequently distorted. The position and shapes of the petals and lip are about as the illustrators saw them, but most likely not as they exist in life. Described as being nearly two millimeters long, the petals are drawn proportionally too small and laterally expanded. The petals are probably erect, more or less parallel to the midvein of the dorsal sepal. The petals are likely the upper lobes of bilobed petals, the lower lobes being very short. However, petals similar to those illustrated on the type sheet are seen in the Central American *Lepanthes eximia*, with single-lobed, horizontal petals.

In Schweinfurth's drawing, the long, acuminate blades of the lip were transversely expanded to either side of the appendix into positions that almost certainly do not exist in the fresh flower. The broader bases of the blades probably cover, or at least are adjacent to, the lower part of the column, with the acuminate tips trailing below.

**Lepanthes mirador** Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 61: 119, 1996.

Ety.: Named for El Mirador in Carchi, Ecuador, where the species was collected.

**Plant** medium in size, epiphytic, caespitose; roots unknown. Ramicauls erect, slender, 8-15 cm long, enclosed by ca. 12-15 lepanthiform sheaths acuminate at the apex. **Leaf** coriaceous, elliptical-ovate, acute, slightly acuminate, leaf 5-8 cm long, 1.7-2.5 cm wide, the base rounded, contracted into petiole 2 mm long. **Inflorescence** a dense, distichous, successively many-flowered raceme, 6 cm or more long, borne behind the leaf by a filiform peduncle 20-23 mm long; floral bracts 1.5-2 mm long; pedicels 1-1.5 mm long; ovary 2 mm long; **sepals** yellow, glabrous, margins denticulate, the dorsal sepal ovate-triangular, subacute, shortly acuminate, 6 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, diverging, acute, lightly acuminate, 5 mm long, 3 mm wide, 2-veined, connate 1.5 mm; **petals** dark brown, microscopically pubescent, transversely bilobed, 1 mm long, 3.5 mm wide, the upper lobe erect, narrowly triangular, acute, attenuate, the lower lobe much smaller, broadly triangular, obtuse; **lip** dark brown, bilaminate, the blades microscopically pubescent, oblong with the apices narrowly rounded, 2 mm long, the connectives short, broadly cuneate, the body broad, connate to the base of the column, the sinus incised with the appendix small, oblong, pubescent with a bilobed apical segment; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Cundinamarca:** El Rosal, alt. 2650 m, 2006, collected and cultivated by A. Carrillo 137-B at his finca El Cartujo, Gachancipa, June 2009, *L. Thoerle 123* (MO).

Also Ecuador **(**Carchi, Holotype, *A. Hirtz, X. Hirtz, J. Del Hierro & F. Sarmiento 4940*: MO).

Until its recent appearance in the Central Cordillera of Colombia, *Lepanthes mirador* was known only from the incomplete type collection made above 3000 meters in northernmost Ecuador. It is distinguished by a combination of morphological features: a narrowly elliptical leaf; a congested raceme borne behind the leaf; acute, shortly acuminate, denticulate sepals with the laterals shortly connate and diverging; petals with a long-acuminate upper lobe and a very short, transversely obtuse lower lobe; and a lip with oblong blades and an appendix with a bilobed apical segment.

*Lepanthes tungurahuae* Luer & Hirtz, from a high altitude in central Ecuador, has similar flowers with similar petals. It is distinguished from *L. mirador* by the ramicauls with coarsely ciliate sheaths; a broader acuminate leaf; and flowers with more deeply connate lateral sepals and a lip with an entire appendix.

## **Lepanthes monitor** Luer, Phytologia 54(5): 354, 1983.

Ety.: From the Latin *monitor*, "a reminder," referring to the morphological features reminiscent of *L. elata* and its relatives.

**Plant** medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender to stout, erect, 6-28 cm long, enclosed by 9-14 minutely ciliate lepanthiform sheaths. Leaf erect, thinly coriaceous, oblong-ovate, acute, acuminate, 6-12 cm long, 2-6 cm wide, the base cuneate or rounded, contracted into a petiole 3-5 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 40 mm long, borne by a filiform peduncle up to 40 mm long behind the leaf; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** pale yellow, glabrous, ovate, acute, margins smooth, the dorsal sepal triangular-ovate, 5-7 mm long, 2.5-4 mm wide, 3-veined, connate to the lateral sepals for 1.5-2 mm, the lateral sepals oblique, diverging, 5-7 mm long, connate 2.5-5 mm into an ovate, bifid synsepal 4-8 mm wide, each 2-veined, the acute apices shortly acuminate; **petals** yellow or white with purple margins, cellular-glandular, transversely bilobed, 1.25-1.5 mm long, 3.5-4 mm wide, the upper lobe oblong with the apex more or less slightly narrowed and everted, the lower lobe oblong, obliquely and narrowly contracted below the middle; **lip** orange, white or purple, bilaminate, blades ovate, minutely pubescent, 1.5-2 mm long, the apices narrowly rounded, the bases rounded, the connectives short, cuneate, the body connate to the base of the column, the sinus obtuse with the appendix small, triangular, pubescent, with a minute apical lobule; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Carmen de Viboral, above San Lorenzo, alt. 2500 m, 21 Mar. 1989, *C. Luer, J. Luer & W. Teague 14335* (MO).

**Quindio:** road between Calarca and Alto de La Linea, collected by R. Escobar, E. Valencia, W. Königer & H. Königer, May 1989, flowered in cultivation at Colomborquídeas, 21 Dec. 1992, *R. Escobar 5056* (MO).

Also Ecuador (Loja, Holotype, *C. Luer et al. 7096*: SEL; Napo; Morona-Santiago; Zamora-Chinchipe), Peru (Amazonas), Bolivia (Cochabamba**,** Santa Cruz).

This species is the austral counterpart of *Lepanthes elata* from Central America and northern Colombia. The two species grow sympatrically in central Colombia and are similar in appearance both vegetatively and florally. The least ambiguous differentiating feature is the appendix, which is pedunculate, pubescent, and narrowly hinged in the sinus of the lip in *L. elata*, while in *L. monitor* it is broadly triangular and pubescent.

*Lepanthes monitor* is frequent and widely distributed from Colombia into Bolivia. It is variable vegetatively and florally, especially in the length of the ramicauls and the shape of the petals. Although the oblique apices of the upper lobes of typical *L. monitor* are usually easily recognized, sometimes the shape is obscure.

## **Lepanthes monoptera** Lindl., J. Bot. [Hooker] 1: 10, 1834.

Ety.: From the Greek *monopteron*, "single-wing," referring to an ovarian carina which was prominent on the dorsum of the ovary of Lindley's only flower.

Syn.: *Lepanthes roseola* Rchb. f., Linnaea 41: 46, 1877.
Ety.: From the Latin *roseolus*, "rosy," referring to the flowers.

**Plant** small to large, epiphytic, caespitose; roots slender. Ramicauls slender to stout, erect, 6-30 cm long, enclosed by 7-11 lightly colored, microscopically scabrous lepanthiform sheaths with slightly dilated ostia. **Leaf** erect, coriaceous, often suffused with purple beneath, narrowly elliptical, acute, 4-13 cm long, 0.5-1.3 cm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a subcongested, successively several- to many-flowered raceme 1-9 cm long, borne behind the leaf by a filiform peduncle ca. 1 cm long; floral bracts 2-3 mm long, enclosing the pedicels 1 mm long; ovary trialate, 1.5-2 mm long; flowers variable in color from green, yellow, rose, to purple-brown; **sepals** glabrous, carinate, ovate, acute, slightly acuminate, margins denticulate, the dorsal sepal 4.75-7 mm long, 3-3.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 4.75-7 mm long, 2 mm wide, connate 1-1.5 mm, 1-veined; **petals** minutely pubescent, transversely bilobed, 1-1.3 mm long, 3-4 mm wide, the lobes triangular, obtuse, subequal; **lip** bilaminate, the blades oblong to ovate, long-ciliate, 2-3 mm long, the bases rounded, the apices narrowly obtuse, the connectives short, from near or below the middle of the blades, the body broad, connate to the base of the column, the sinus obtuse, with a minute, ovate, pubescent appendix; **column** slender, clavate, 2-3 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** epiphytic in cloud forest Alto de Mefué, north of Toledo, alt. 2600 m, 12 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10301* (MO).

**Quindio:** Alto de La Linea, alt. 2700 m, collected by R. Escobar, E. Valencia, W. & H. Koniger, May 1989, flowered in cultivation at Colomborquídeas, 21 Dec. 1992, *R. Escobar 5058* (MO).

**Cundinamarca:** epiphytic in cloud forest above Gutierrez, south of Bogotá, alt. 2850 m, 19 May 1984, *C. Luer, J. Luer, R. Escobar, et al. 10385* (MO).

**Cauca:** Macizo Colombiano, Valle de Las Papas, alredores de La Laguna de Cusiyaco, dense Clusia forest above and east of Laguna Cusizaco, alt. 3470 m, 8 Oct 1958, *H.G. Barclay & P. Juajibioy C. 5960* (MO).

Also Ecuador (Azuay, Holotype, *W. Jameson s.n.*: K; Carchi; Imbabura; Sucumbíos; Pichincha, holotype of *L. roseola*, *Spruce 5954*: W; Napo; Tungurahua; Morona-Santiago; Cañar; Loja; Zamora-Chinchipe), Bolivia (La Paz).

This species was described and illustrated by Lindley from a single plant and a single flower. Although crude, enough details are included to leave no doubt about its identity. Jameson collected the plant near Cuenca, where it is known to be especially common today. It is still common at high altitudes in much of Ecuador, but less common in Colombia. *Lepanthes dolichopus* Schltr. had been reduced to a synonym of *L. monoptera* (Luer 1996b). Schlechter (1920, 1929) described and illustrated a flower of *L. dolichopus* with a similar lip and petals, and single-veined lateral sepals. It departs from *L. monoptera* in several other significant characteristics, however, including apparently much narrower, entire sepals; glabrous petals; and an inflorescence as long or slightly longer than the leaf. *Lepanthes dolichopus* remains unresolved.

The leaves are narrowly elliptical, not much shorter than the ramicaul when the plant is small, but in larger plants the ramicaul is noticeably much longer than the leaves. The subcongested racemes reach about half the length of the leaf. The sepals are denticulate, with the laterals single-veined. The transverse petals are oblong but variously shaped, often overlapping above the column. The blades of the lip are ciliate and elliptical or ovate, and the appendix is short and pubescent.

Two similar member of *Lepanthes* subsect. *Breves*, *L. ferax* and *L. nulla* Luer & R. Escobar, also produce short, few-flowered racemes that often bear capsules. The flowers of both are smaller overall. The flower of *L. ferax* is distinguished by denticulate sepals, petals with obtuse lobes, and a lip with an appendix reduced to a microscopic lobule buried in the pubescence of the sinus. The flower of *L. nulla*

is distinguished by petals with the upper lobe narrowed above the middle, and a lip without an appendix.

**Lepanthes mucronata** Lindl., Comp. Bot. Mag. 2: 356, 1836.

Ety.: From the Latin *mucronatus*, "mucronate," referring to the tip of the leaves.

Syn.: *Lepanthes mesochlora* Rchb. f., Xenia Orch. 1: 147, 1856.
Ety.: From the Greek *mesochloros*, "green in the middle," referring to the colors of the flower.

Syn.: *Lepanthes macroura* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 55, 1921.
Ety.: From the Greek *makroura*, "large or long tail," referring to the mucronate tip of the leaf.

Syn.: *Lepanthes tricuspis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 100, 1920.
Ety.: From the Latin *tri*, "three," and *cuspis*, "pointed," referring to the mucronate tip of the leaf.

**Plant** small to large, epiphytic, caespitose; roots slender. Ramicauls slender erect, 2-23 cm long, enclosed by 7-12 closely fitting, microscopically ciliate-scabrous lepanthiform sheaths with narrowly dilated, acuminate ostia. Leaf more or less horizontal, often purple beneath, thinly coriaceous, narrowly ovate, acute, acuminate, 1-8 cm long, 0.5-2 cm wide, the base broadly to narrowly cuneate into a petiole 1-2 mm long. **Inflorescence** a congested, successively many-flowered raceme up to 10 mm long, borne on top of the leaf by a filiform peduncle 3-20 mm long, a short and a long peduncle frequently co-existing; floral bracts 1-2 mm long; pedicels 2-4 mm long; ovary 1.5-2 mm long; **sepals** yellow, brown or purple, glabrous, margins smooth, the dorsal sepal ovate, obtuse, 3-4 mm long, 2.75-3.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals connate into a broadly ovate synsepal, 3-4 mm long, 3-3.75 mm wide, each 2-veined, the apex obtuse, often shortly bifid; **petals** green, brown or purple, microscopically pubescent, transversely bilobed with a slender marginal process between the lobes, 1-1.5 mm long, 3-5 mm wide, the upper lobe oblong, sharply truncate, with the angles shortly acuminate, sometimes erose, the lower lobe triangular, acute; **lip** purple or brown, bilaminate, blades thin, adherent medially over the column, elliptical with rounded ends, minutely ciliate, 1.5-2.25 mm long, borne at the base by short connectives, the body narrow, connate to the base of the column, the sinus obtuse with a comparatively large, oblong, concave, ciliate appendix; **column** 1.5-2.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** epiphytic in forest near Yarumalito, northeast of Santa Rosa, alt. 2350 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia 11387* (MO); epiphytic in forest remnant north of Santa Rosa de Osa, above Estadero Manicomio, alt. 2580 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14141* (MO); Medellín, corregimiento de San Cristobal, alt. 2870-2890 m, 15 June 1997, *L. F. Giraldo 1602* (JAUM).

**Santander:** epiphytic in cloud forest, east of Bucaramanga toward Berlin, alt. 2700 m, 7 May 1984, *C. Luer, J. Luer, E. Valencia & R. Escobar 10159* (MO).

**Chocó:** San José del Palmar, in humid secondary cloud forest, road to Valle department, alt. 2100 m, flowered in cultivation at El Jordan, *A. de Wilde 3900* (MO).

**Boyacá:** Chiquinquira, alt. 3000 m, 2 Jan. 1993, *A. de Wilde 4441* (MO).

**Cundinamarca:** epiphytic in cloud forest above Gutierrez, south of Bogotá, alt. 2700 m, 19 May 1984, *C. Luer, J. Luer, R. Escobar & W. Teague 10365* (MO).

**Quindio:** epiphytic at the pass between Salento and Tocha, alt. 3300 m, 10 May 1993, *C. Luer, J. Luer, R. Escobar & A. de Wilde 16753* (MO).

**Valle del Cauca:** Alto de Los Galápagos, at the pass between Valle del Cauca and Chocó, alt. 2050 m, 13 May 1993, *C. Luer et al. 16804* (MO).

**Cauca:** An äumen auf dem Páramo von Guanacas, 3000 m, *F. C. Lehmann 4551* (isotype of *L. tricuspis*: K, MO); Cordillera Central, vertiente occidental. Cabeceras del río Palom quebrada del río López: Alto del Duende, matorrales y bosquecillo de páramo, alt. 3300-3350 m, 1-2 Dec. 1944, *J. Cuatrecasas 188867* (MO).

**Nariño:** epiphytic in scrub forest in the páramo between La Cocha and Putumayo, alt. 3000 m, 26 Jan. 1987, *C. Luer, J. Luer, C. H. Dodson, O. de Benavides, R. Escobar & E. Valencia 12522* (MO); wet forest around La Planada above Ricaurte, alt. 1800 m, flowered in cultivation at the La Planda Orquideario, 25 Jan. 1987, *C. Luer 12506* (MO); in montane pluvial forest, La Planada, south of Ricaurte on road from Pasto to Tumaco, alt. 1820 m, 21 July 1989, *C. H. Dodson, R. Escobar & E. Valencia 18065* (MO).

**Putumayo:** Santiago, San Antonio de Bellavista, Páramo del Bordoncillo, alt. 3240 m, 19 Mar. 1999, *S. M. Pasmiño & M. R. Posso 23* (MO).

Also Ecuador (Pichincha, Holotype, *Hall s.n.*: K; holotype of *L. mesochlora*, *Jameson 27*: W;

Carchi; Imbabura; Sucumbíos; Tungurahua; Pastaza; Azuay; Morona-Santiago; Loja; Zamora-Chinchipe), Bolivia (Cochabamba).

*Lepanthes mucronata* is one of the most common Andean species of the genus. It varies vegetatively, no two populations being alike. The plants vary from small to relatively large, but always with very slender ramicauls with the leaves more or less horizontal. The thin leaves vary from ovate, short- to long-acuminate, to narrowly ovate, and to nearly linear. The tips of the leaves are often prominently mucronate, but this feature occurs in varying degrees in most species of the genus.

The inflorescences lie upon the upper surface of the leaf, commonly within the central groove. Curiously, a raceme borne by a short peduncle usually accompanies a second raceme with a twice longer peduncle. The racemes commonly bear their single brownish or greenish flower simultaneously. Double racemes are also sometimes seen in related species. The flowers vary somewhat, especially in the upper margin of the upper lobe of the petals, but the flower is always readily recognized. The upper margin is truncate and sometimes erose, with the corners more or less narrowly pointed. A narrow process, or third lobe, projects laterally from the margin between the two transverse lobes, indicating its membership in a large alliance of species. The lip is distinct, with the pair of thin, fragile blades overlying a proportionally large, scaphoid appendix.

The similar *Lepanthes andrenoglossa* has been treated as a synonym (Luer 1996b), but is sufficiently distinct to be recognized as a species. It differs in a smaller stature with ovate leaves. A very congested, single raceme bears flowers with petals with simple, obliquely truncate upper lobes; and a lip with blades that do not adhere to one another medially.

**Lepanthes muscula** Luer & R. Escobar, Phytologia 54(5): 354, 1983.

Ety.: From the Latin *musculus*, "a little mouse," in reference to the trilobed appendix.

**Plant** medium to large in size, epiphytic, caespitose; roots coarse. Ramicauls erect, slender to stout, 5-22 cm long, enclosed by 10-14 ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, elliptical-ovate, acute, acuminate, 4-7 cm long, 1.5-2 cm wide, the base cuneate into the petiole 2-3 mm long. **Inflorescence** a progressively lengthening, loose, lightly flexuous raceme up to 20 cm long including the peduncle ca. 2 cm long, 2-3 flowers open simultaneously; floral bracts 1.5-2 mm long; pedicels 0.75-1.5 mm long; ovary sulcate, 1.5-2 mm long; **sepals** purple-brown or yellow-orange, glabrous, narrowly ovate, acute, lightly acuminate, margins smooth or microscopically cellular-denticulate, the dorsal sepal 5-7.5 mm long, 2.5-3 mm wide, 3-veined, connate 1.5 mm to the lateral sepals, the lateral sepals diverging slightly, 5-7 mm long, 1.5-2.25 mm wide, 2-veined, connate 2 mm; **petals** dark red or yellow-orange, cellular-glandular, transversely oblong, bilobed, 1-1.25 mm long, 2.5-3.75 mm wide, the upper lobe oblong, the apex obliquely narrowed, obtuse, the lower lobe smaller, oblique, triangular, obtuse; **lip** dark red or purple, bilaminate, the blades oblong with rounded ends, 1.75 mm long, microscopically ciliate-pubescent, the connectives cuneate, the body narrow, connate to the base of the column, the appendix minute, pubescent, orbicular with a pair of rounded terminal lobules; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Cauca:** Puracé, alt. 2800-2900 m, collected by E. Valencia, May 1992, flowered in cultivation at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5188* (MO).

**Putumayo:** Santiago, San Antonio de Bellavista, Páramo del Bordoncillo, alt. 3240 m, 14 Apr. 1999, *S. M. Pasmiño & M. R. Posso 43* (MO).

Also Ecuador (Carchi, Holotype, *C. Luer & R. Escobar 8300*: SEL; Sucumbíos; Napo; Tungurahua).

This species occurs at high altitudes in northernmost Ecuador and southern Colombia. It is identified by a loose, elongated raceme with several flowers open simultaneously; ovate, acuminate sepals; transverse petals with the upper lobe reminiscent of that of *Lepanthes monitor*, with the apex narrowed; and an

appendix with a terminal pair of lobules similar to that of *L. hirtzii*. The colors of the flower parts vary greatly throughout its distribution. *Lepanthes elongata*, another Colombian species with an extremely long raceme, is distinguished by a peduncle exceeding the narrowly ovate leaf, and petals with a long-acuminate upper lobe.

**Lepanthes myoxophora** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(3): 261, 1984.

Ety.: From the Greek *myoxophorus,* "mouse-bearing," in reference to the appearance of the flowers with the large, concave, earlike petals.

**Plant** medium to large in size, epiphytic, caespitose; roots filiform. Ramicauls slender, erect, 3-20 cm long, enclosed by 6-16 ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, acute, acuminate, 3-10 cm long, 1-2.4 cm wide, the base cuneate into a petiole 2-5 mm long. **Inflorescence** a very congested, long-pedicellate, successively flowered raceme up to 10 mm long, borne behind the leaf by a filiform peduncle 1-5.5 cm long; floral bracts 1.5 mm long; pedicels 4 mm long; ovary 3 mm long; **sepals** yellow, glabrous, smooth-carinate, margins minutely denticulate, the dorsal sepal triangular-ovate, acute, 4.5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, acuminate, diverging, 4 mm long, 2 mm wide, 2-veined, connate 1 mm; **petals** green, edged in black, ciliate-pubescent, transversely bilobed, 1.2 mm long, 4 mm wide, with a small, uncinate middle lobe on the outer margin, the upper lobe oblong with the end rounded and lightly concave, the lower lobe narrowly triangular, acute; **lip** yellow, suffused with rose, the blades glabrous, thin, oblong, concave, with the ends rounded, l. 75 mm long, the connectives narrowly oblong from the middle of the blades, connate to the base of the column, the appendix broadly oblong, thin, concave, ciliate, the truncate apex notched, 0.75 mm long; **column** 2 mm long, protruding beyond the blades, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Yarumal; above Quebrada El Oro, alt. 1850 m, 20 May 1983, *R. Escobar et al. 2621* (Holotype: SEL), C. Luer illustr. 9100; Yarumal, epiphytic in forest remnant along the road to Briceño, Quebrada El Oro, alt. 1850 m, 16 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14181* (MO).

This large species is identified by the congested, long-pedicellate racemes shorter than the leaf, bearing small flowers with minutely denticulate sepals, the laterals with apices diverging approximately 90 degrees; transverse, pubescent petals, with a hooklike process in the middle and a prominent, concave upper lobe; and the lip with glabrous, narrow blades and a large, oblong, ciliated appendix.

**Lepanthes nautilus** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(10): 1046, 1984.

Ety.: Named for the fancied resemblance of the flower to a nautilus.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-7 cm long, enclosed by 5-7 close, minutely ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, elliptical, subacute, 27-37 mm long, 13-17 mm wide, the base cuneate into a petiole ca. 3 mm long. **Inflorescence** a drooping, loose, successively flowered raceme up to 10 cm long including the filiform peduncle 3.5-4 cm long, 2 flowers often produced simultaneously; floral bracts 1.5 mm long, lightly echinate; pedicels 3 mm long; ovary 1.5 mm long; **sepals** glabrous, dorsal sepal brown with 3 green stripes, triangular, acute, long-acuminate, obtusely angled at the base, deeply concave, margins smooth, 20 mm long, 14 mm wide, 3-veined, connate to the lateral sepals for 7 mm to form a cupped, bowl-shaped flower, lateral sepals green, suffused with brown on the outer third, margins minutely ciliate, connate to near the apex into a triangular, abruptly long-acuminate, concave synsepal, 20 mm long, 12 mm wide, each 2-veined, the slender, linear apex shortly bifid; **petals** brown, shortly pubescent, transversely bilobed, 1.4 mm long, 4.5 mm wide, the upper lobe oblong, rounded, the lower lobe narrowly oblong, obtuse; **lip** purple-brown, bilaminate, the blades oblong, ciliate, 1.9 mm long, with rounded ends, the connectives short, cuneate, the broad body connate to the column above the base, the sinus narrow with a narrowly triangular appendix; **column** stout, 2 mm long, the anther dorsal, the stigma ventral.

**Santander:** epiphytic in cloud forest east of Bucaramanga toward El Picacho, alt. 2550 m, 7 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10203* (Holotype: MO; Isotype: SEL); same collection, cultivated by L. & J. Posada at Colomborquídeas, El Retiro, flowered in cultivation 26 May 1984, *R. Escobar 3249* (JAUM, COL).

The spectacular *Lepanthes nautilus* often produces two large flowers simultaneously on a weak, arching, successively flowered raceme. The sepals form a cup-shaped flower with the attenuated apices protruding at either end, the synsepal shortly bifid. The flowers of *L. chelonion* are similarly shaped and nearly as large, but the blades of the lip of *L. chelonion* are approximately twice as long as the column rather than subequal in length. Vegetatively, *L. chelonion* is much smaller, with ramicauls ten to fifteen millimeters in length, bearing leaves only nine to twelve millimeters long.

**Lepanthes nematodes** Luer & R. Escobar, Orquideología 18(1): 66-68, 1991.

Ety.: From the Greek *nematodes*, "filamentous," referring to the threadlike petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2.5-6.5 cm long, enclosed by 8-9 microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** spreading, coriaceous, ovate, acute, 18-22 mm long, 7-9 mm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a congested, successively several-flowered raceme up to 7 mm long, borne on the dorsum of the leaf by a slender peduncle 3-10 mm long; floral bracts 0.4 mm long; pedicels 0.6 mm long; ovary 0.75 mm long; **sepals** light yellow, glabrous, carinate, margins smooth, the dorsal sepal ovate, acute, with the sides revolute, 2.6 mm long, 1.5 mm wide, 3-veined, connate to the lateral sepals for 0.3 mm, the lateral sepals ovate, oblique, diverging, acute, 2.6 mm long, 1.25 mm wide, 2-veined, connate 1 mm; **petals** yellow, glabrous, transversely bilobed, filamentous, 0.2 mm long, 1.2 mm wide, the upper lobe longer; **lip** yellow, glabrous, bilobed without blades, the lobes oblong, with obtuse apices and uncinate bases, 0.8 mm long, embracing the column, the body broad, connate to the base of the column, the sinus with a minute, oblong, membranous appendix; **column** erect, cylindrical-clavate, 1 mm long, the anther dorsal, the stigma apical.

**Risaralda:** Mun. Pueblo Rico, La Linea, alt. ca. 2200 m, collected by E. Valencia, 16 Feb. 1985, flowered in cultivation at Colomborquídeas, 6 Apr. 1988, *C. Luer 13018* (Holotype: MO); same area, alt. 2100 m, 11 May 1993, *C. Luer et al. 16779* (MO).

This little species is characterized by minute, yellow flowers borne on top of a small, horizontal leaf; smooth-margined, ovate sepals; tiny, filamentous petals; and an erect, cylindrical column embraced by the lobes of a shorter lip. There are several other very small Colombian species with bilobed, filamentous petals and acute sepals, e.g., *Lepanthes ramosii* Luer, *L. hyphosa*, but the petals of the others are proportionally much wider, equaling or surpassing the length of a sepal.

**Lepanthes nematostele** Luer, Novon 3: 449 (1993).

Ety.: From the Greek *nematostele*, "threadlike column," referring to the column.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-5 cm long, enclosed by 7-8 long-ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 10-15 mm long excluding the petiole 1-1.5 mm long, 8-10 mm wide, the base cuneate into the petiole. **Inflorescence** an erect, loose, successively several-flowered raceme up to 5 cm long including the slender peduncle 2-2.5 cm long; floral bract 1.5 mm long; pedicel 1.5-2 mm long; ovary 3.5 mm long, lightly ribbed; **sepals** dark red, glabrous, cristate along the veins and margins, the dorsal sepal deeply concave, ovoid, acute, 6 mm long, 2.5 mm wide unexpanded, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals connate 5 mm into a deeply concave, ovoid synsepal similar to the dorsal sepal, 6 mm long, 4 mm wide unexpanded, the apices free for less than 1 mm, 2-veined; **petals** transversely bilobed, long-pubescent on the back surface, 1 mm long, 5 mm wide, the upper lobe short, semicircular, the lower lobe triangular, acute, long acuminate; **lip** bilaminate, the blades glabrous, arcuate, firmly adherent to each other below the middle over the column, 1.25 mm long, the apices everted, rounded, ciliate, the

connectives and body short, connate to the column near the apex, the appendix triangular, retrorse; **column** weak, proportionally very long and very slender, 3.5 mm long, the anther dorsal, the stigma ventral with a prominent, descending process.

**Valle del Cauca:** Yumbo, Dapa, growing on trees at a height of ca. 1.5 in open areas, alt. 2000 m, Feb. 2011, *O. Pérez & E. Parra s.n.* (VALLE, HPUJ).

Also Ecuador (Carchi, Holotype, *S. Dalström & T. Höijer 1234*: MO).

This remarkable species is characterized by its small stature; ramicauls with long-ciliate lepanthiform sheaths; a loose inflorescence longer than the leaves; concave, crested sepals; petals with a long-acuminate lower lobe; and a long, threadlike column bearing near the tip a tiny lip. The blades of the lip are solidly agglutinated over the column. A prominent stigmatic process, as large as the retrorse appendix, descends from between the blades of the lip.

*Lepanthes ictalurus* has similar cristate, concave sepals, with the laterals deeply connate; petals with a much longer lower lobe; and a long, thin column with the lip connate above the middle. It is readily distinguished by the proportionally large, narrow lip with blades abruptly terminating in filiform appendages longer than the blade.

**Lepanthes nicolasii** Luer & R. Escobar, Orquideología 20(3): 304-305, 1997.

Ety.: Named in honor of Nicolas Pelaéz of Medellín, Colombia, enthusiastic student of orchids, who discovered this species.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-18 cm long, enclosed by 12-14 minutely ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, elliptical-oblong, acute, slightly acuminate, 5-11 cm long, 2-3 cm wide, the base rounded or broadly cuneate into a petiole 2-4 mm long. **Inflorescence** a congested, distichous, successively flowered raceme, up to 30 mm long, borne by a pendent, filiform peduncle 25-35 mm long; floral bracts oblique, 1.5 mm long; pedicels 1.5 mm long; ovary 8.5 mm long; **sepals** yellow, carinate, microscopically pubescent within, margins microscopically ciliate, the dorsal sepal ovate-triangular, acute, 9.5 mm long, 5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, diverging, acute, slightly short-acuminate, connate 4.5 mm into a bifid synsepal, 9.5 mm long, 8 mm wide, each 2-veined; **petals** orange with the outer margin red, microscopically cellular-pubescent, transversely bilobed, 1 mm long, 7 mm wide, the lobes narrowly triangular, acute, with the lower lobe uncinate-recurved; **lip** red-purple, bilaminate, microscopically pubescent, sparsely ciliate at the apices, the blades ovate with the narrow blade developed only below the middle, narrowly triangular above the middle, 2.2 mm long, the connectives broad, short, the body broad, connate to the base of the column, with the appendix small, bilobulate, pubescent; **column** stout, 1 mm long, the anther apical and the stigma ventral.

**Antioquia:** Jardín, between Jardín and Quebrada La Cifuentes, alt. 2000 m, collected by N. Pelaéz, Jan. 1993, flowered in cultivation at Colomborquídeas, Feb. 1994, *R. Escobar 5452* (Holotype: MO), C. Luer illustr. 17155.

This species is known only from a single collection in the Central Cordillera of Colombia, subsequently cultivated at Colomborquídeas. The congested raceme is pendent, borne by a slender, elongated, arching peduncle from beneath the leaf. The large flowers are held out on elongated ovaries. The sepals are microscopically pubescent; the petals are transverse with the upper lobe narrowly triangular and the lower uncinate; and the lobes of the lip are narrowly ovate with the blades developed only below the middle, the distal halves merely narrowly triangular. The appendix is minute and bilobulate. *Lepanthes nicolasii* is distinguished from the other yellow-flowered, large species most easily by its long peduncle and flowers with petals with hook-shaped, everted lower lobes.

**Lepanthes niesseniae** Luer, Revista Soc. Boliv. Bot. 4(1): 7-9, 2003.

Ety.: Named in honor of Andrea Niessen de Uribe of Orquídeas del Valle, Cali, Valle del Cauca, Colombia.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-4.5 cm long, enclosed by 7-8 microscopically ciliate lepanthiform sheaths. **Leaf** suffused with purple, erect, thinly coriaceous, elliptical-ovate, acute, slightly acuminate, 4-6 cm long, 1.5-1.7 cm wide, the base cuneate into a petiole ca. 2 mm long. **Inflorescence** a very congested, secund, successively many-flowered raceme, up to 8 mm long, borne on top of the leaf by a slender peduncle 17-20 mm long; floral bracts oblique, acute, 1 mm long; pedicels 2.5-3 mm long; ovary 1.75 mm long; **sepals** orange, carinate, glabrous, gaping, margins microscopically ciliate, the dorsal sepal ovate, subacute, 8 mm long, 5.5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals triangular-ovate, oblique, diverging widely, 7.5 mm long, 3.75 mm wide, connate barely 1 mm, 2-veined; **petals** transversely bilobed, less than 1 mm long, 3.5 mm wide, 1-veined, the lobes more or less oblong, of equal length, the upper lobes dull green, thick, bosselated, the lower lobes orange, curved, round at the apex; **lip** yellow, bilobed, with the lobes broadly cuneate, oblique, flanking the column, 1.25 mm long, with the margins bosselated and verrucose, forming a narrow body, connate to the base of the column, with the appendix narrowly oblong in the narrow sinus; **column** stout, 1.5 mm long, the shaft 0.75 mm long, the anther dorsal and the stigma apical.

**Valle del Cauca:** without collection data, cultivated at Orquídeas del Valle, *A. Niessen & J. C. Uribe 088* (Holotype: MO), C. Luer illustr. 19899.

This species is characterized by its medium size; caespitose habit; and a very congested, successively flowered, secund raceme shorter than the thinly coriaceous, elliptical leaf. The sepals are orange with microscopically ciliate margins. The dorsal sepal is larger than the acute, triangular lateral sepals. The prominent, erect petals are reminiscent of *Lepanthes lucifer* Luer & Hirtz, of northwestern Ecuador, but in *L. niesseniae* the upper lobes are thick, cuneiform in shape, and bosselated rather than oblong-sigmoid and smooth. The lip is minute with verrucose, cuneate lobes flanking the column.

**Lepanthes niphas** Luer & R. Escobar, Orquideología 18(1): 68-70, 1991.

Ety.: From the Greek *niphas*, "a snowflake," referring to the tiny, crystalline flowers.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4-9 cm long, enclosed by 12-15 microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly ovate, acute, 3.5-5 cm long, 9-11 mm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 15 mm long, borne behind the leaf by a slender peduncle 5-20 mm long; floral bracts spiculate, 1 mm long; pedicels 1.25 mm long; ovary 2.25 mm long; **sepals** white, glabrous, margins smooth, the dorsal sepal ovate, acute, 2.25 mm long, 1.25 mm wide, connate to the lateral sepals for 0.25 mm, 3-veined, the lateral sepals ovate, diverging more than 90°, acute, 2.5 mm long, 1 mm wide, 1-veined, connate 1 mm; **petals** white, cellular-glandular, transversely bilobed, 0.2 mm long, 1 mm wide, the lobes subequal, narrowly triangular, obtuse; **lip** white, cellular-glandular, bilobed, the lobes semi-orbicular, rounded, embracing the column, cleft anteriorly with a minute apiculum in the sinus, 0.8 mm long, 1 mm wide expanded, connate to the column between the outer and middle thirds; **column** erect, cylindrical-clavate, 1 mm long, the anther dorsal, the stigma apical.

**Antioquia:** Abejorral, collected by E. Valencia, flowered in cultivation at Colomborquídeas, 6 Apr. 1988, *C. Luer 13019* (Holotype: MO; Isotype: JAUM).

**Risaralda:** Pueblo Rico, Alto de Linea, epiphytic in cloud forest, alt. 2100 m, 11 May 1993, *C. Luer et al. 16780* (MO).

This little species is characterized by minute, crystalline, white flowers borne behind an erect, narrowly ovate leaf; smooth-margined, ovate sepals, with the laterals single-veined; minute, transverse petals; and an erect, cylindrical column embraced by the rounded lobes of a shorter, bilobed lip connate to the column well above the base. Two other small Colombian species in *Lepanthes* subsect. *Breves*

share this prominent, erect column dwarfing a much smaller lip, but both *L. eros* and *L. hurgo* have proportionally large petals.

**Lepanthes norae** Foldats, Bol. Soc. Venez. Ci. Nat. 28: 244, 1969.

Ety.: Named in honor of Nora Dunsterville, who collected this species with her husband.

Syn.: *Lepanthes janus* Luer & R. Escobar, Amer. Orchid Soc. Bull. 54:(6): 730-732. 1985.

Ety.: Named for the Roman deity Janus, with two faces, referring to the two forms of the species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-3 cm long, enclosed by 2-4 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 8-15 mm long, 6-10 mm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** an erect, lax, distichous, subflexuous, successively several-flowered raceme up to 7 cm long, borne by a filiform peduncle 1-1.5 cm long; floral bracts minutely spiculate, 1.5 mm long; pedicels 1.5-3.5 mm long; ovary spiculate, 1-2 mm long; **sepals** yellow, often suffused with red, dark red, orange, or translucent purple, glabrous, margins microscopically cellular to ciliate, the dorsal sepal ovate, subacute, acuminate, 5-10 mm long, 3-7 mm wide, 3-veined, connate to the lateral sepals about a fourth the length, the lateral sepals ovate, oblique, diverging, subacute, 5-10.5 mm long, connate over half the length into an ovate, bifid synsepal, 5-10.5 mm wide, each 2-veined; **petals** purple to yellow with red medially, transversely bilobed, microscopically pubescent, 1 mm long, 4-5 mm wide, the lobes similar, oblong-triangular, obtuse; **lip** red or purple, ciliate, bilaminate, the blades oblong with the ends obtuse, 2 mm long, the connectives cuneate, the body narrow, connate above the base of the column, the appendix small, narrowly triangular, pubescent; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** Páramo de Jurisdicciones, alt. 2750 m, 30 Apr. 1982, *C. Luer, J. Luer, R. Escobar & E. Valencia 7666, 7667* (MO); epiphytic in cloud forest below the Páramo de Jurisdicciones, alt. 2600 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10220* (MO); epiphytic in cloud forest near Alto de San Francisco, above Villacaro, alt. 2850 m, 11 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10269* (MO); Toledo, epiphytic in cloud forest, Alto de Mefué, alt. 2500 m, 12 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10283* (holotype of *L. janus*: MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 6 June 1984, *R. Escobar 3253* (COL, JAUM); same area, 12 May 1982, *C. Luer & R. Escobar 7803* (SEL); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, 14 July 1984, *R. Escobar 3303* (COL, JAUM).

Also Venezuela (Táchira, Holotype, *G. C. K. Dunsterville & E. Dunsterville 64*: VEN).

In this treatment, *Lepanthes norae* is considered to be an extremely variable species-complex, and *L. janus* is included within this concept. The two specimens illustrated in this volume seem unlikely to be conspecific, but the specimens from Norte de Santander show a continuum of characteristics without a logical demarcation. This small species is characterized by elliptical leaves surpassed by a lax raceme of successive, variably colorful flowers. The ovary varies from smoothly sulcate to lightly ribbed with occasional spicules to cristate-spiculate. The sepals range in size from about five to seven millimeters in length, with the sepals of one exceptional specimen measuring ten millimeters. The margins of the sepals vary from microscopically irregular to (more usually) ciliate. The blades of the lip are oblong to elliptic to oblong-obovate, with apices short- to long-ciliate. The appendix varies from cymbiform to relatively long and slender.

In Foldats's drawing, the lip is shown with suboblong blades with shortly ciliate margins and a simple, triangular-lanceolate, pubescent appendix. Dunsterville's illustration in Venezuelan Orchids Illustrated depicts a lip with blades similarly shaped, but with long-ciliate apices and a longer, slender, short-ciliate appendix. One of the illustrations herein differs from these drawings in the shape of the blades of the lip and the microscopic detail of the appendix; the other is an extreme variation from the far end of the spectrum of characteristics. Only the examination of additional specimens can define species within this complex.

## **Lepanthes nulla** Luer & R. Escobar, Orquideología 19(2): 102, 1994.

Ety.: From the Latin *nullus*, "none," referring to the totally absent appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls comparatively stout, erect, 3-6 cm long, enclosed by 7-8 microscopically scabrous lepanthiform sheaths. **Leaf** erect, thickly coriaceous, narrowly ovate, acute, 20-30 mm long, 6-9 mm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 18 mm long, borne behind the leaf by a filiform peduncle 4-7 mm long; floral bracts infundibular, 1 mm long; pedicels 1 mm long; ovary 1 mm long, frequently forming a capsule; **sepals** yellow-green, glabrous, margins smooth, 1-veined, the dorsal sepal ovate-triangular, acute, 3 mm long, 1.3 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate-triangular, oblique, diverging, acute, 2.8 mm long, 1.25 mm wide, 2.5 mm wide together, connate 0.5 mm; **petals** yellow, cellular-glandular, transversely bilobed, 0.6 mm long, 1.75 mm wide, the lobes obscurely triangular, oblique, obtuse, the upper lobe variously narrowed above the middle with the tip purple; **lip** crimson, bilaminate, the blades cellular-glandular, narrowly oblong as the thickened margin of the connective, with obtuse ends, 1 mm long, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus acute, without any appendix; **column** 1 mm long, with the anther and the stigma apical.

**Quindio:** epiphytic in shrubs at the pass between Salento and Tocha, alt. 3300 m, 10 May 1993, *C. Luer, J. Luer, R. Escobar, A. de Wilde & J. Gómez 16748* (Holotype: MO).

Although abundant where found, this little species is known only from the one area of cloud forest remnant in the Central Cordillera. It is distinguished by its small size with thick, narrowly ovate leaves. The racemes behind the leaf bear fruit and flowers simultaneously. The flowers are small with acute, single-veined sepals. The petals are small with the tip of the upper lobes variously elongated, sometimes hook-shaped. The blades of the lip are thickened margins of broad, cuneate connectives, and the sinus between lacks an appendix. The similar, widespread *Lepanthes monoptera* is distinguished by a flower larger in overall size; petals with oblong to triangular, obtuse, subequal lobes; and a lip with a small, ovate, pubescent appendix.

## **Lepanthes obovata** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(8): 823, 1984.

Ety.: From the Latin *obovatus,* "obovate," referring to the distinctive shape of the leaves.

**Plant** medium in size, epiphytic, caespitose; roots very slender. Ramicauls slender, erect, 10-13 cm long, enclosed by 14-16 long-ciliate lepanthiform sheaths widely dilated at the apex. **Leaf** erect, thinly coriaceous, obovate, 5-5.5 cm long, 2-2.5 cm wide, the obtuse apex abruptly contracted into a 1 cm long acumen, the base cuneate into a 2 mm long petiole. **Inflorescence** a congested, flexuous, successively flowered raceme up to 10 mm long, borne on top of the leaf by a filiform peduncle 28-30 mm long; floral bracts 1 mm long, ciliate; pedicels 1.5 mm long; ovary 2 mm long; **sepals** light orange, glabrous, with long-ciliate carinae, margins smooth, dorsal sepal broadly ovate, acute, 3.5 mm long, 2.75 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, lateral sepals ovate, oblique, diverging, acute, 3.5 mm long, 2 mm wide, 2-veined, connate 1.2 mm; **petals** bright orange, pubescent, transversely bilobed, 1 mm long, 3 mm wide, the upper lobe oblong, oblique, truncate, obtuse, obtusely angled on the inner margin, the lower lobe smaller, falcate; **lip** red, pubescent, broadly cordate, 1.25 mm long, 1.75 mm wide expanded, the rounded apex abruptly short-acuminate, the lateral lobes thickened, embracing the column, attached to the base of the column; **column** stout, 1.25 mm long, the anther and stigma apical.

**Antioquia:** San Luis, Río Caldera, alt. 1650 m, collected by E. Valencia, 23 June 1983, flowered in cultivation at Colomborquídeas, El Retiro, 13 Jan. 1984, *R. Escobar 3195* (Holotype: MO; Isotypes: JAUM, SEL), C. Luer illustr. 9490.

This species is readily recognized by the obovate, abruptly acuminate leaves; and flowers with a broadly cordate lip with a short apical acumen and rounded lateral lobes embracing the column. *Lepanthes trichocaulis* Luer & R. Escobar is

alike but smaller in all parts, with flowers with obtuse rather than acute sepals, and a similar cordate lip but lacking an apiculum.

**Lepanthes octavioi** Luer & R. Escobar, Orquideología 18(2): 128-130, 1991.

Ety.: Named in honor of Brother Octavio Ospina of Sibundoy, Colombia, discoverer of this species.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls suberect to horizontal, slender, 3-6 cm long, enclosed by 9-11 ciliate lepanthiform sheaths with dilated ostia. **Leaf** more or less horizontal, erect in relation to the ramicaul, coriaceous, ovate, acute, slightly acuminate, 3.5-5 cm long, 1.3-1.7 cm wide, the base cuneate, contracted into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 8 mm or more long, borne on top of the leaf by a filiform peduncle 9-12 mm long; floral bracts 1.5 mm long, minutely echinate; pedicels 1.25 mm long; ovary 2.5 mm long; **sepals** yellow-orange, glabrous, carinate-spiculate, ovate, subacute, margins denticulate, the dorsal sepal 5.5 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1.25 mm, the lateral sepals oblique, diverging slightly, 5.75 mm long, 1.75 mm wide, 2-veined, connate 1.75 mm; **petals** yellow, transversely bilobed, cellular-pubescent, 0.5 mm long, 3.25 mm wide, the lobes about equal, oblong, obtuse, incurved; **lip** dull purple, glabrous, bilaminate, the blades oblong with the apices narrowly obtuse, 2.4 mm long, the connectives cuneate, forming a thick body, connate to the base of the column, the front surface of the sinus convex beneath a minute fold, the appendix triangular, minute, on the external surface of the body; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Putumayo:** epiphytic in cloud forest east of San Francisco, alt. 2100 m, 27 Jan. 1987, *C. Luer, J. Luer, R. Escobar & O. Ospina 12548* (Holotype: MO; Isotype: JAUM); Río Blanco, east of San Francisco, alt. 1650 m, collected by R. Escobar 3753, flowered in cultivation at Colomborquídeas, 18 Mar. 1989, *C. Luer 14220* (MO).

*Lepanthes octavioi* is characterized by the congested, short-pedicellate inflorescence bearing a yellow-orange flower upon the leaf. The sepals are ovate, shortly acuminate and denticulate; the petals are small and narrowly transversely oblong; the blades of the lip cover the column; the sinus of the body of the lip is thick and shallowly concave on the front surface below a small, transverse flap between the connectives; and the appendix is merely a minute triangle on the external surface of the body. The similar flowers of the smaller *L. opetidion* Luer & R. Escobar are about half the size, and the bilobed lip embraces the column.

**Lepanthes octopus** Luer & R. Escobar, Orquideología 20(3): 305-307, 1997.

Ety.: From the Latin *octopus*, "with eight feet," referring to the eight segments of the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-35 mm long, enclosed by 6-8 minutely ciliate lepanthiform sheaths with oblique ostia. **Leaf** erect, coriaceous, elliptical, obtuse, 14-15 mm long, 9-10 mm wide, the base cuneate, contracted into a petiole 2 mm long. **Inflorescence** a subsecund, congested, successively several-flowered raceme up to 6 mm long, borne behind the leaf by a filiform peduncle 7-9 mm long; floral bracts muriculate, 1-1.25 mm long; pedicels 1 mm long; ovary 1.5 mm long; **sepals** light rosy brown with green margins, glabrous, membranous, carinate-spiculate, widely spread, margins minutely ciliate, the dorsal sepal ovate, acute, 4 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals connate into an ovate, acute synsepal, 4 mm long, 2.5 mm wide, each 2-veined; **petals** orange, microscopically ciliate, forked into 4 filamentous segments ca. 3 mm long, the uppermost segment shortest, ca. 1.5 mm long; **lip** rose, microscopically ciliate, subcordate, with the apex broadly rounded, shortly incised, with the basal lobes encircling the column, 1.6 mm long, 1.4 mm wide, connate to the column near the apex; **column** slender, 2 mm long, the anther and stigma apical.

**Santander:** Virolín, alt. 1800 m, collected by E. Valencia, Oct. 1994, flowered in cultivation at Colomborquídeas, 23 May 1995, *C. Luer 17531* (Holotype: JAUM; Isotype: MO).

*Lepanthes octopus*, apparently endemic in the Eastern Cordillera of Colombia, is similar to *L. alcicornis* from the Central Cordillera. *Lepanthes octopus* is distinguished by leaves that are elliptical instead of ovate-acuminate. The lateral sepals are connate into an ovate synsepal, while those of *L. alcicornis* are nearly free, elliptical, and subacute. The two species share petals divided into four segments, but those of *L. octopus* are filamentous rather than narrowly linear-triangular. Both species share a cordate lip, although that of *L. alcicornis* is elliptically cordate with a more deeply cleft apex. The synsepal of *Lepanthes skeleton* is also deeply connate and the petals are also filamentous, but the latter is distinguished by the larger size, cucullate dorsal sepal, and petals with three lobes.

**Lepanthes ollaris** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(9): 920, 1984.

Ety.: From the Latin *ollaris*, "pertaining to a pot," referring to the deep cavity of the body of the lip.

**Plant** medium to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-18 cm long, enclosed by 10-14 shortly ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, ovate, acute, acuminate, 8-10 cm long, 2.5-3 cm wide, the base rounded, contracted into a petiole 3-4 mm long. **Inflorescence** a congested, successively several-flowered raceme up to 25 mm long, borne behind the leaf by a filiform peduncle 10-25 mm long; floral bracts 1-1.5 mm long; pedicels 4-5 mm long; ovary 2.5 mm long; **sepals** greenish white, glabrous, margins smooth, the dorsal sepal broadly ovate, obtuse, 5.5 mm long, 4.5 mm wide, 3-veined, connate 1.5 mm to the lateral sepals, the lateral sepals oblique, diverging, ovate, acute, 5.75 mm long, 2.75 mm wide, 2-veined, connate 2.5 mm; **petals** light green with the upper margin purple, pubescent, transversely bilobed, 1.25 mm long, 5 mm wide, the middle lobe an uncinate marginal lobule, the upper lobe oblong, truncate, the lower lobe narrowly falcate-triangular, acute; **lip** red, bilaminate, the blades translucent, oblong-lunate with rounded ends, adherent medially to each other over the column, 2 mm long, the connectives narrow, oblique, from the middle of the blades, the connectives and body connate to the column just above the base, the body greatly dilated, saccate, 1.5 mm wide, with a minute, pubescent appendix on the anterior rim of the body; **column** flat, 2 mm long, with the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Frontino, Alto de Cuevas, alt. 2050 m, 4 May 1983, *C. Luer, J. Luer, R. Escobar, A. Pridgeon & E. Valencia 8954* (Holotype: SEL); same area, flowered in cultivation at Colomborquídeas, 26 May 1984, *R. Escobar 3247* (JAUM, MO).

**Valle del Cauca:** El Cairo, in secondary forest dominated by *Tibouchina* sp., Cerro del Inglés, alt. 2260-2300 m, 3 Jan. 1987, *P. Silverstone-Sopkin, N. Paz, R. T. González, I. Cabrera, D. Garcés & A. Henao 2910* (MO).

Also Ecuador (Carchi).

This species is found locally in the Western Cordillera of Colombia and northernmost Ecuador. It is distinguished by the rather large, thin, elliptical, acuminate leaves borne by tall ramicauls. The flowers are borne in a congested raceme near the center of the back of the leaf. The flowers are large and basically similar to those of *Lepanthes agglutinata*, with translucent sepals, green petals with a dark purple margin, and an uncinate process from the margin between the lobes. The lower lobes of the petals are elongate and subfalcate to either side of the lip. The lip is most distinctive, with the body dilated into a large, saccate structure that protrudes on either side of the blades of the lip. While the bodies and appendices of the lips of other species similar to *L. agglutinata* are large and have a cavity or hollow, this is among the most unusual for its size.

**Lepanthes opetidion** Luer & R. Escobar, Orquideología 18(2): 131-133, 1991.

Ety.: From the Greek *opetidion*, "a small awl," in allusion to the shape of the leaf.

**Plant** small, weak, epiphytic, caespitose; roots slender. Ramicauls erect, very slender, 5-6.5 cm long, enclosed by 10-15 tightly fitting lepanthiform sheaths with microscopically ciliate ostia. **Leaf**

spreading to deflexed, purple beneath, coriaceous, ovate, 22-27 mm long, 6-9 mm wide, the apex acute, linear-long-attenuate, longer than the ovate basal portion, tridentate, the rounded base contracted into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 4 mm long, borne on top of the leaf by a filiform peduncle 3-7 mm long; floral bracts smooth, 1 mm long; pedicels 1.75 mm long; ovary 1 mm long; **sepals** yellow, glabrous, carinate, the dorsal sepal ovate, subacute, 2.25 mm long, 2 mm wide, margins smooth, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals denticulate, ovate, oblique, diverging, subacute with the apices obtuse, 2.5 mm long, 2.25 mm wide, 2-veined, connate 0.75 mm; **petals** dark yellow, transversely bilobed, microscopically pubescent (cellular-glandular), 0.5 mm long, 2.25 mm wide, the lobes narrowly triangular, obtuse, apices incurved, the lower lobe narrower; **lip** dark yellow, shortly pubescent, transversely bilobed, U-shaped, the lobes thickened, poorly developed into ovate blades with rounded ends, embracing the column, 0.6 mm long, 1 mm wide expanded, the body between the lobes thick without an appendix; **column** 0.75 mm long, the anther dorsal, the stigma apical.

**Nariño:** Mun. Ricaurte, collected in the cloud forest around La Planada, alt. 1800 m, flowered in cultivation at the La Planada Science Center, 25 Jan. 1987, *C. Luer 12504* (Holotype: MO).

The very slender ramicauls of this delicate species bear a nearly pendent leaf with a long, narrow apical portion longer than the ovate basal portion; and a very small, yellow flower with denticulate lateral sepals and a pubescent, bilobed lip without an appendix, embracing the column. The similar flowers of the larger *Lepanthes octavioi* are about twice as large, with a lip with oblong blades and a minute appendix.

**Lepanthes ophelma** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(6): 732-734, 1985.

Ety.: From the Greek *ophelma*, "a broom," referring to the appearance of the appendix.

**Plant** medium in size, epiphytic, caespitose; roots numerous, slender. Ramicauls slender, erect, 8-11cm tall, enclosed by 10-12 close, short-ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly ovate, acute, acuminate, apiculate, 6-8 cm long, 1.5-2.2 cm wide, the base cuneate into a petiole 3-4 mm long. **Inflorescence** a very congested, distichous, successively flowered raceme up to 15 mm long, borne on top of the leaf by a filiform peduncle 15-30 mm long; floral bracts 1.5 mm long; pedicels 2.5 mm long; ovary ribbed, 5 mm long; **sepals** glabrous, ovate, acute, carinate, margins microscopically denticulate, the dorsal sepal orange-brown, 10 mm long, 7.5 mm wide, 5-veined, connate to the lateral sepals for 3 mm, the lateral sepals bright yellow, oblique, connate 4 mm into an ovate synsepal with the acute apex bifid, apices approximate, 10.5 mm long, 9.5 mm wide together, each 3-veined; **petals** yellow, microscopically pubescent, transversely bilobed, 1.5 mm long, 5.5 mm wide, with a setiform tooth 1 mm long on the margin between the lobes, the upper lobe oblong, truncate, the lower lobe narrowly triangular, acute; **lip** yellow, suffused with brown, the blades oblong with subacute ends, 2.2 mm long, glabrous, adherent medially over the column, the connectives short, cuneate, the body broad, connate to the base of the column, the sinus occupied by a triangular appendix, long-ciliate externally, with a short, oblong apical segment; **column** 2.5 mm long with the apex bifurcate, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Mesopotamia, between La Unión and Sonsón, alt. 2400 m, 19 Aug. 1984, *R. Escobar, L. C. Vieira, F. Siegert & C. Head 3380* (Holotype: JAUM; Isotypes: COL, MED, MO), C. Luer illustr. 10468.

This species is most remarkable for the large, colorful flowers, which with their weight often hang over the sides of the narrowly ovate-acuminate leaves. The orange dorsal sepal is five-veined; the yellow lateral sepals are each three-veined. The transversely bilobed petals produce a setiform tooth at the middle. The oblong lobes of the lip are glabrous and adherent over the column. The appendix is relatively large and densely long-pubescent on the external surface.

## **Lepanthes oreibates** Luer & R. Escobar, Orquideología 18(2): 133-136, 1991.

Ety.: From the Greek *oreibates*, "a mountain climber," referring to the prolific habit.

**Plant** relatively large, epiphytic, caespitose and prolific; roots slender. Ramicauls stout, erect, often producing another ramicaul at the apex, 5-18 cm long, enclosed by 6-12 light brown, minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, shortly acuminate, 3.5-6 cm long, 1.7-2.5 cm wide, the base cuneate into a petiole 5-7 mm long. **Inflorescence** a congested, successively many-flowered raceme up to 4 cm long, borne by a filiform peduncle 3-4 cm long; floral bracts 2-3 mm long; pedicels 2-2.5 mm long; ovary 2 mm long; **sepals** translucent light yellowish tan, glabrous, ovate, acute, carinate, margins smooth, the dorsal sepal 9 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, 8.5 mm long, connate 3 mm, 4.5 mm wide together, the apices approximate, each 2-veined; **petals** red with purple margins, microscopically pubescent, transversely bilobed, 1 mm long, 3 mm wide, the lobes triangular with obtuse apices; **lip** purple, bilaminate, the blades microscopically pubescent, ovate, the apices narrowly rounded, the bases rounded, 1.5 mm long, the connectives broad, cuneate, the body broad, connate to the base of the column, the appendix small, pubescent, oblong, bilobulate; **column** stout, 1.75 mm long, the anther apical, the stigma ventral.

**Cundinamarca:** epiphytic in cloud forest, Alto de Gutierrez, alt. 2960 m, collected by R. Escobar, 1987, flowered in cultivation at Colomborquídeas, 18 Mar. 1989, *C. Luer 14227* (Holotype: MO).

This species differs from the other known species with a prolific habit in the combination of the following characteristics: the large size; the more or less decurving, congested inflorescence; flowers with narrowly ovate sepals; and a bilaminate lip with the clinandrium protruding from between the apices and a minute, bifid appendix. The raceme is borne by a slender peduncle about half as long as the leaf. The elongating raceme eventually reaches the length of the leaf, but it usually droops over to the side.

Vegetatively, *Lepanthes prolifera* Foldats may be nearly as large as some smaller plants of *L. oreibates*, but it is distinguished by a narrowly elliptical leaf rarely exceeding 3.5 centimeters in length. The flowers are similar in size, but those of *L. prolifera* are distinguished by denticulate sepals and a clinandrium shorter than the blades of the lip.

## **Lepanthes orion** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(3): 316, 1985.

Ety.: Named for Orion, a mythological giant known for his beauty.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 10-38 cm long, enclosed by 11-18 glabrous lepanthiform sheaths. **Leaf** erect, thinly coriaceous, prominently veined beneath, ovate, acute, acuminate, 6-13 cm long, 2.5-4.3 cm wide, the rounded base contracted into a petiole 2-3 mm long. **Inflorescence** a very congested, distichous, successively flowered raceme up to 10 mm long, borne beneath the leaf by a filiform peduncle 18-40 mm long; floral bracts imbricating, 1.5 mm long; pedicels 1.5 mm long; ovary 4 mm long; **sepals** yellow, glabrous, ovate, obtuse, margins smooth, the dorsal sepal 6 mm long, 3.75 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals oblique, diverging more than 90°, 5.5 mm long, 3.75 mm wide, 2-veined, connate 1.5 mm, **petals** bright yellow with purple-brown margins, glabrous to microscopically pubescent, transversely bilobed, 1.75 mm long, 5.25 mm wide, with an obtuse angle on the outer margin between the lobes, the upper lobe oblong with the apex rounded, the lower lobe smaller but similar; **lip** yellow with the external margin red-purple, glabrous, the blades ovate, 1.5 mm long, with a longitudinal, midline thickening, acute at the apices, round at the bases, the connectives thick, oblong, from the apical halves of the blades, the thick body connate to the column above the base, the protuberant, rounded sinus with a thin, flabellate, erose appendix appressed to the stigma in the natural position; **column** clavate, 1.5 mm long, the anther dorsal, the stigma ventral.

**Santander:** Mun. Velez, epiphytic in cloud forest west of Velez toward Landazuri, alt. 2150 m, 4 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10120* (Holotype: JAUM; Isotype: MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 11 June 1984, *R. Escobar 3262* (COL, JAUM).

**Antioquia:** Normandia, other collecting data unknown, flowered in cultivation at Colomborquídeas, June 2009, *L. Thoerle 137* (MO).

Also Ecuador (Tungurahua, Morona-Santiago).

*Lepanthes orion* is known from two disjunct localities: the Eastern Cordillera of Colombia and the eastern slopes of the central Andes of Ecuador. In spite of its large size, this species still seems delicate because of its relatively slender ramicauls with pale, glabrous sheaths and slender roots. The thin, ovate, acuminate leaves are veined beneath and slightly concave, and the very congested racemes are borne against this surface. All flower parts are glabrous; the sepals are obtuse; the similar lobes of the petals are oblong; and the lip has thick, carinate blades and a thick, protuberant body bearing a thin, fan-shaped appendix which lies against the ventral stigma.

Two other large Colombian species with mostly yellow flowers borne in a densely distichous raceme also share a lip with blades that are thick between poorly defined calli. The lateral sepals of *Lepanthes auriculata* also diverge widely and the appendix of the lip is adpressed to the stigma, but it is distinguished by acute sepals and an appendix that is pubescent and oblong. The lip of the similar *L. steyermarkii* is characterized by a protuberant, shortly ciliate, obtuse sinus, held beneath the stigma.

**Lepanthes ortiziana** O. Pérez, E. Parra & Kolan., Orquideología 27(2): 229, 2010.

Ety.: Named in honor of the late Padre Pedro Ortiz Valdivieso, S.J., of the Universidad Javeriana in Bogotá, Colombia, authority on the orchids of Colombia.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls more or less horizontal, slender, 5-18 cm long, enclosed by 8-12 lepanthiform sheaths with dilated, attenuated ostia. **Leaf** horizontal to pendent, suffused with purple, microscopically pubescent, thinly coriaceous, ovate, acute, slightly acuminate, 4-6.5 cm long, 1.8-2.5 cm wide, the base broadly cuneate, not cordate, contracted into a conduplicate petiole ca. 5 mm long. **Inflorescence** 1-4 congested, successively many-flowered racemes up to 25 mm long, including the peduncle 5-12 mm long, borne in the sulcus on top of the leaf; floral bracts 1.5 mm long; pedicels 1.5 mm long; ovary 2.5 mm long; **sepals** light yellow-green, glabrous, margins minutely denticulate, the dorsal sepal broadly ovate, obtuse, abruptly contracted into a short cauda, the blade 4-5 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, diverging, obtuse, acuminate into short caudae 0.5-1 mm long, 3.5-4 mm long, 2-veined, connate ca. 1.5 mm; **petals** green with inner margin of the upper lobe purple, glabrous, transversely bilobed, 1 mm long, 3 mm wide, narrowed between the lobes, the upper lobe broadly uncinate, the apex obtuse, incurved, the apices usually overlapping above the column; 1.5 mm long, 1 mm wide, the lower lobe oblong-triangular, narrowly obtuse, 1.5 mm long, 0.5 mm wide; **lip** purple, glabrous, bilaminate, 2 mm long, the blades oblong, with the ends rounded, the connectives short, cuneate, the body connate to the base of the column, the appendix short, triangular; **column** 1.5 mm long, with the anther dorsal and the stigma ventral with an incurved process.

**Valle del Cauca:** Mun. Yumbo, Hda. "Cielo Azul," alt. 1960 m, 9 May 2010, *O. Peréz & E. Parra 752* (Holotype: VALLE).

**Colombia:** collection data unknown, imported from Colomborquídeas, flowered in cultivation in Little Compton, Rhode Island, July 2011, *L. Thoerle 183* (MO), C. Luer illustr. 21666.

This species from Valle del Cauca in southern Colombia resembles *Lepanthes smaragdina* Luer & R. Escobar from the Western Cordillera of Antioquia. Similar in habit, inflorescence, and the greenish color of the flowers, *L. ortiziana* differs with lateral sepals with spreading, rather than approximate apices; and the petals with wider, more or less broadly uncinate, incurved upper lobes. The lips are alike with a minute, acuminate appendix.

**Lepanthes oscillifera** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(1): 30-33, 1984.

Ety.: From the Latin *oscillum,* "a swing," and *-fir,* "bearing," referring to the appendix hinged to the sinus of the lip.

**Plant** small to medium size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, suberect to horizontal, 5-17 cm long, enclosed by 7-13 close, microscopically ciliate lepanthiform sheaths. **Leaf** erect to spreading, coriaceous, ovate, acute, long-acuminate, 25-45 mm long, 7-21 mm wide, the rounded base abruptly contracted into a 1 mm-long petiole. **Inflorescence** a single flower borne in succession on a very congested, distichous raceme up to 5 mm long, borne by a filiform peduncle 5-24 mm long on top of the leaf; floral bracts 1 mm long; pedicels 1-1.5 mm long, ovary 1.5 mm long; **sepals** translucent purple, glabrous, ovate, subacute, margins cellular-ciliate, the dorsal sepal 3-5.75 mm long, 2.5-4 mm wide, 3-veined, connate to the lateral sepals for 0.5-1 mm, the lateral sepals connate to above the middle into a shortly bifid synsepal, 3-5.25 mm long, 2.75-4.5 mm wide together, each 2-veined; **petals** red-orange, transversely oblong, 1 mm long, 3.5-4.5 mm wide, minutely pubescent, the upper lobe dolabriform, the lower lobe triangular, acute; **lip** orange to purple, the blades ovate, acute, 1-1.75 mm long, minutely pubescent, ciliate anteriorly, the connectives oblong-cuneate, the body narrow, connected to the base of the column, the margin of the sinus inflexed with a large appendix broadly hinged from the center, the appendix flap-like, the apical portion concave and ciliate with a minutely bilobed apex; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Yarumal, Ratón Pelado, alt. 2700 m, 22 May *1983, R. Escobar & E. Valencia 2669* (Holotype: SEL), C. Luer illustr. 9111; Mun. Frontino, Alto de Cuevas, alt. 2050 m, 4 May 1983, *C. Luer, R. Escobar, et al. 9019* (SEL); same locality, 14 May 1983, *R. Escobar & E. Valencia 2599* (SEL), C. Luer illustr. 9096; Alto de Musinga, alt. 1900 m, 11 April 1974, *R. Escobar et al. 1203* (JAUM); Yarumal, epiphytic in cloud forest, Ratón Pelado, alt. 2650 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10061* (MO); Yarumal, epiphytic in forest remnant along the road to Briceño, Quebrada El Oro. alt. 1850 m, 16 March 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14182, 14199* (MO).

**Cudinamarca:** Gutierrez, flowered in cultivation at Colomborquídeas, 3 June 1995, *C. Luer 17723* (MO).

This complex lip of this species is remarkable. The margin of the broad sinus is rolled in and hinged to the broad, convex basal half of the appendix. The apical segment of the appendix is concave with pubescent margins and a narrowly bilobulate apex. The whole appendix swings up and down easily beneath the stigma. *Lepanthes troglodytes* Luer & R. Escobar has a similarly mobile appendix, but differs with less deeply connate sepals and reniform petals.

**Lepanthes osiris** Luer & R. Escobar, Orquideología 19(2): 103, 1994.

Ety.: Named for the hornlike petals, reminiscent of the bull's horns that commonly adorn the headdress of the Egyptian god Osiris.

**Plant** medium in size, epiphytic, scandent; roots slender, produced from the apices of ramicauls. Ramicauls erect, stout, prolific, 6-8 cm long, enclosed by 5-7 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, 3.5-6 cm long including the petiole 0.5-1 cm long, the blade 1-1.8 cm wide, cuneate below into the petiole. **Inflorescence** a loose, strict, successively several-flowered raceme up to 25 cm long including the 3-4 cm long peduncle; floral bracts oblique, 3.5 mm long; pedicels 1.5-2 mm long; ovary 2.5 mm long, subcostate; **sepals** yellow, glabrous, carinate, margins microscopically ciliate, the dorsal sepal ovate, acute, slightly acuminate, 10 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals connate into an ovate synsepal with the apex acute and bifid, 10 mm long, 6.25 mm wide, each 2-veined; **petals** glabrous (microscopically cellular-pubescent), transversely bilobed, 1.2 mm long, 7 mm wide, the lobes yellow, suffused with rose, subequal, narrowly ovate, acute, the upper lobes hornlike, with the tips curving outward, with a small marginal angle between the lobes; **lip** yellow-orange, bilaminate, the blades microscopically ciliate, narrowly oblong with rounded ends, 2.75 mm long, the connectives short, cuneate, the body narrow, connate to the base of the column, the sinus broad, with a small, oblong, bifid appendix; **column** 2.5 mm long, the anther dorsal, the stigma ventral.

**Cauca:** Mun. Totoro, epiphytic in Páramo de las Delicias east of Popayán, alt. 3380 m, 17 Nov. 1982, *C. Luer & R. Escobar 8470* (Holotype: SEL).

This species is apparently confined to the cool, moist, scrubby forests of the Páramo de las Delicias in southern Colombia. Although vegetatively of moderate size, the habit is long-scandent. A gradually lengthening, distantly flowered raceme of relatively large flowers eventually far surpasses the leaf. The flowers are most remarkable for the curved, hornlike upper lobes of the petals. The bifid synsepal is similar to the ovate, slightly acuminate dorsal sepal. The blades of the lip are narrowly oblong. The tip of the appendix is minutely bifid.

**Lepanthes ostraconopetala** Luer & Hirtz, Selbyana, 30(1): 11, 2009.

Ety.: From the Greek *ostrakon*, "a kind of low, rounded shell," referring to the convex petals.

**Plant** large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 16-42 cm long, enclosed by 11-18 microscopically scabrous, tubular lepanthiform sheaths, not dilated at the orifice. **Leaf** coriaceous, erect, narrowly elliptical-ovate, acute, acuminate, 11-14 cm long, 3-3.5 cm wide, the base cuneate into the petiole 5 mm long. **Inflorescence** a sublax, successively many-flowered raceme up to 14 cm long including the slender peduncle 2-3 cm long behind the leaf; floral bracts 2.5 mm long; pedicels 1 mm long; ovary 2.5 mm long, irregularly carinate-lacerate; **sepals** yellow, suffused with rose, glabrous, carinate-fimbriate externally, margins microscopically cellular-ciliate, the dorsal sepal triangular, acute, 10 mm long, 4.25 mm wide, 3-veined, connate 1 mm to the lateral sepals, the lateral sepals connate 5 mm into an ovate, bifid synsepal 10 mm long, 4.75 mm wide, each 2-veined, the apices attenuate, acute, in apposition; **petals** yellow, edged in purple, cellular-glandular, transversely bilobed, 0.6 mm long, 1.6 mm wide, 1-veined, the lobes obliquely ovoid, convex with margins recurved with a minute apiculum between the lobes, the upper lobe subacute, 1 mm long, 0.6 mm wide, the lower lobe uncinate, acute, 0.6 mm long and wide; **lip** yellow, edged in purple, bilaminate, glabrous, but ciliate at the apices, the blades narrowly oblong, rounded at the ends, convex, 1.5 mm long, the connectives narrowly cuneate, the body narrow, connate to the column at the base, the appendix minute, oblong, pedunculate, microscopically bilobulate at the tip; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Nariño:** forest between Ipiales and La Victoria, alt. 3200 m, 4 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4630* (Holotype: SEL).

This large species, apparently endemic at a high altitude in southernmost Colombia, is similar to *Lepanthes illex*, which is widely distributed in northern Ecuador. Both species are characterized by ramicauls usually longer than twenty centimeters, and a large, acuminate leaf surpassed by a successively many-flowered raceme of flowers with narrowly acute sepals. *Lepanthes ostraconopetala* is best distinguished by its convex petals with recurved margins and a minute apiculum between the lobes. The blades and body of the lip are narrower than those of *L. illex*, and the tip of the minute appendix is microscopically bilobed.

**Lepanthes oxybaphon** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(6): 734-736, 1985.

Ety.: From the Greek *oxybaphon*, "a saucer," referring to the appearance of the lip.

**Plant** medium in size, epiphytic, caespitose; roots slender, purple. Ramicauls slender, erect to suberect, 3-6 cm long, enclosed by 5-8 long-ciliate lepanthiform sheaths with dilated ostia. **Leaf** erect to spreading, coriaceous, suffused with purple beneath, elliptical, acute, 1.5-3 cm long, 1-1.8 cm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a subdense, successively several-flowered raceme up to 3 cm long, borne beneath the leaf by a filiform peduncle 7-10 mm long; floral bracts shortly echinate, 1 mm long; pedicels 1.5 mm long; ovary 1 mm long; **sepals** rose-red with a yellow border, glabrous, 3-veined, narrowly ovate, acute, margins minutely denticulate, the dorsal sepal 7.5 mm long, 3 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, 7 mm long, 2.5 mm wide, connate for 1 mm; **petals** yellow, suffused with red medially, microscopically

pubescent, transversely narrowly oblong with narrowly rounded ends, 0.5 mm long, 5 mm wide, the lower lobe very long in comparison to the upper lobe which may be reduced to 0.5 mm in length; **lip** bright dark red, microscopically pubescent, the blades reduced to oblong, incurved margins of a broad body, 2.5 mm long, subcircular when expanded, the ends broadly rounded, the connectives short and very broad forming the broad body beneath the short column, connate to the column near the middle, the sinus short and rounded with a minute lobule for an appendix; **column** 2 mm long, the anther dorsal, the stigma apical.

**Norte de Santander:** Cerro Plateado, epiphytic in subpáramo cloud forest, Páramo de Jurisdicciones, alt. 2600 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10228* (Holotype: JAUM; Isotype: MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, *R. Escobar 33182* (COL, JAUM); same area, between Ocaña and Pamplona, alt. 2600 m, 10 Nov. 1981, *C. Luer, J. Luer, R. Escobar & D. Portillo 6628* (SEL); same area, alt. 2570 m, 30 April-May 1 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7659* (SEL).

This species is similar to *Lepanthes antennifera*, but *L. oxybaphon* is distinguished by three-veined rather than two-veined lateral sepals; and petals with long, slender lower lobes and very short upper lobes rather than smaller lower lobes. The apex of the column is positioned in the center of the round, saucer-like lip. The blades of the lip are thickened margins of a broad, concave body, with the short apices rounded and overlapped in front of a shallow, rounded sinus, a considerable distance beyond the apex of the column.

## **Lepanthes oxypetala** Luer & Hirtz, Orchidee (Hamburg) 39(2): 57, 1988.

Ety.: From the Greek *oxypetala*, "with long-pointed petals," referring to the shape of the petals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender to stout, erect, 4-13 cm long, enclosed by 5-11 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-oblong, 3-5 cm long, 1.2-2.2 cm wide, the apex obtuse, shortly acuminate, the base broadly cuneate, contracted into a petiole 4-8 mm long. **Inflorescence r**acemose, 1-4 loose, flexuous, flexible, successively many-flowered racemes up to 10 cm long including the slender peduncle 1-2 cm long; floral bracts 1.5-2 mm long; pedicels 1-1.5 mm long; ovary 1.5 mm long; **sepals** red-purple, glabrous, oblong-ovate, subacute to obtuse, shortly acuminate, margins smooth, the dorsal sepal 5-7 mm long, 2.5-2.75 mm wide, 3-veined, connate to the lateral sepals for 1-2 mm, the lateral sepals oblique, 5-6 mm long, connate 3-4 mm into a broadly ovate, bifid synsepal, 4.5 mm wide, each 2-veined; **petals** orange-brown, minutely pubescent, transversely bilobed, inserted above the base of the column, 0.75-1 mm long, 5 mm wide, the lobes narrowly triangular, acute, long-acuminate, the lower lobe smaller; **lip** orange-brown, minutely pubescent, bilaminate, the blades elliptical or ovate, convex, 1.75 mm long, the apices narrowly obtuse, the bases rounded, the connectives broadly oblong from the bases of the blades, short, the body broad, connate to the column above the middle, the appendix thick, oblong, long-pubescent, rounded at the apex; **column** 2.5 mm long, slender, the anther dorsal, the stigma ventral.

**Nariño:** La Cocha, alt. 2900 m, collected by E. Valencia, January 1988, flowered in cultivation at Colomborquídeas, 3 Jan. 1993, *R. Escobar 5240* (MO).

**Putumayo:** epiphytic in scrub forest in the páramo between La Cocha and Sibundoy, alt. 3000 m, 26 Jan. 1987, *C. Luer, J. Luer, C. H. Dodson, O. de Benavides, R. Escobar & E. Valencia 12528* (MO).

Also Ecuador (Carchi, Holotype, *C. Luer, J. Luer, A. Hirtz & W. Flores 11113*: MO; Imbabura).

*Lepanthes oxypetala* grows intermixed with *L. biloba* in northern Ecuador and southern Colombia. In habit it is indistinguishable from *L. biloba*. The flowers are also similar, the long-acuminate upper lobes of the petals resembling those of the forms of *L. biloba* that were segregated into *L. metaxy*. The petals of *L. oxypetala*, however, originate from the shaft of an elongated column above its base. The convex, pubescent blades of the lip are similar to those of *L. biloba*, but in the latter the connectives support the bases of the blades, rather than the middle, and the body is connate near the base of a shorter column.

**Lepanthes pachoi** Luer & R. Escobar, Orquideología 19(2): 104, 1994.

Ety.: Named in honor of Francisco "Pacho" López, curator of orchids at Colomborquídeas, who discovered this species.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 18-22 cm long, enclosed by 15-17 microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, shortly acuminate, 8-9 cm long including the petiole, 3.5-4 cm wide, the rounded base contracted into a petiole 0.5 cm long. **Inflorescence** a congested, successively several-flowered raceme, at least 1 cm long, borne by a slender peduncle 3-3.5 cm long; floral bracts acute, 1.5 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** pale yellow, flat, low-carinate, glabrous, margins smooth, the dorsal sepal ovate-triangular, acute, acuminate, 10-11 mm long, 5.5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, diverging widely, acuminate, acute, 10-11 mm long, 5 mm wide, 2-veined; **petals** yellow, the upper lobe with red margins, microscopically cellular-pubescent, transversely bilobed, 3 mm long, 4.5 mm wide, the lobes obliquely triangular, creating a 4-angled blade, the upper lobe larger with the broadest edge uppermost, the lower lobe with the broadest edge outermost; **lip** rose, sub-bilaminate, the blades narrowly ovate as thickened lateral margins of a broad, subquadrate body, 1.3 mm long and broad, embracing the under half of the column, connate to the base of the column, the sinus protuberant, rounded, with a narrowly bilobed, pubescent appendix at the apex; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. El Retiro, Hda. Normandia above Colomborquídeas, alt. 2500 m, collected by F. López et al., Oct. 1992, flowered in cultivation at Colomborquídeas, 12 Dec. 1992, *R. Escobar 5015* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16556.

Although this species resembles several others characterized by a large size with large, mostly yellow flowers borne in a short, congested raceme, *Lepanthes pachoi* is distinguished by the peculiar flabellate petals. The four-angled petals appear to consist of a pair of lopsided triangles. The lip is also remarkable, consisting of a subquadrate body under the column, with the lateral margins of the body developed into narrow blades to either side of the column. The appendix is a two-pronged organ on the margin of the protuberant sinus of the body.

**Lepanthes palaga** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(6): 604, 1984.

Ety.: From the Greek *palaga,* "a gold ingot," referring to the bright yellow-orange petals.

**Plant** medium in size, epiphytic, weak, caespitose; roots filiform. Ramicauls very slender, erect, 6-13 cm long, enclosed by 6-12 close, microscopically scabrous lepanthiform sheaths. **Leaf** subspreading, coriaceous, ovate, long-acuminate, 3.5-5.5 cm long, 1-1.5 cm wide, the rounded base contracted into a petiole 2 mm long. **Inflorescence** a congested, secund, successively flowered raceme up to 8 mm long, borne on top of the leaf by a filiform peduncle 8-20 mm long; floral bracts and pedicels each 1.5 mm long; ovary 1.5 mm long; **sepals** pale yellow, glabrous, broadly ovate, acute, margins smooth, the dorsal sepal triangular-ovate, 2.5 mm long, 2.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, connate 1 mm into a transversely cordate synsepal, 2.5 mm long, 2.75 mm wide, each 2-veined, the acute apices slightly diverging; **petals** bright yellow-orange, microscopically pubescent, transversely oblong, 0.5 mm long, 2 mm wide, the upper lobe oblong with the end rounded, the lower lobe smaller, narrowly triangular, acute; **lip** yellow, suffused with rose, the blades oblong with rounded ends, microscopically ciliate, 1.5 mm long, the connectives broadly cuneate, the body originating with the base of the column, the sinus obtuse, with a large, ovate, concave, pubescent appendix 0.5 mm long, with a bilobulate apex; **column** stout, 1.5 mm long, the anther apical, the stigma subapical.

**Antioquia:** Mun. Yarumal, Quebrada El Oro, alt. 1850 m, 21 May 1983, *R. Escobar* & *E. Valencia* 2651 (Holotype: SEL), C. Luer illustr. 9106; same collection, flowered in cultivation at Colomborquídeas, 3 Nov. 1983, *R. Escobar 3177* (JAUM); same locality, 14 Feb. 1984, *R. Escobar & E. Valencia 3235* (COL, JAUM, MO); epiphytic in cloud forest along Río El Oro, north of Yarumal, alt. 2700 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10074, 10075* (MO); Yarumal, epiphytic in cloud forest, above road to El Cedro, alt. 1900 m, 17 March 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14211* (MO).

In habit, this species is very similar to a common form of *Lepanthes mucronata*. It exhibits the same peculiarity of producing two racemes on top of the leaf: one short, the other twice as long, each bearing successive, single flowers. The tiny flowers of *Lepanthes palaga* are not particularly remarkable except for the proportionally large, pubescent appendix. The petals do not bear the middle lobe typical of *L. mucronata.* The subdense raceme of *L. planadensis* Luer & R. Escobar bears similar though larger flowers, with proportionally larger petals with subequal lobes.

**Lepanthes panope** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(3): 318-321, 1985.

Ety.: Named for *Panope* Ménard, a genus of clams (Panope, a mythological sea nymph), in allusion to the appearance of the blades of the lip and column.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 10-39 cm tall, enclosed by 15-20 minutely ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, ovate, acute, acuminate, 10-12 cm long, 4-5.5 cm wide, the rounded base contracted into a petiole 3-4 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 45 mm long, borne behind the leaf by a filiform peduncle up to 35 mm long; floral bracts 1.25 mm long; pedicels 1 mm long; ovary 3 mm long; **sepals** light yellow, glabrous, subcarinate, ovate, acute, margins smooth, the dorsal sepal 8 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals diverging, connate 3 mm, 7 mm long, 6.25 mm wide together, each 2-veined; **petals** microscopically pubescent, transversely oblong-bilobed, 1 mm long, 4.5 mm wide, the upper lobe red-purple, oblong with the apex rounded, the lower lobe orange, narrowly oblong; **lip** orange with red margins, glabrous or microscopically pubescent, the blades elliptical, longitudinally concave, 1.5 mm long with rounded ends, the connectives short, obliquely cuneate, the body connate to the column above the base, the sinus occupied by a broad, oblong, membranous appendix with a flabellate, ciliate apex appressed to the stigma; **column** lavender, 2.5 mm long including the rostellar projection, the anther dorsal, the stigma ventral.

**Norte de Santander:** Mun. Toledo, epiphytic in cloud forest, Alto de Santa Inéz, alt. 2100 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10317* (Holotype: MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, 9 July 1984, *R. Escobar 3291* (COL, JAUM); same area, alt. 2200 m, 13 May 1982, *C. Luer & R. Escobar 7846* (SEL).

This large species is very similar to *Lepanthes steyermarkii*, also known from northern Colombia. *Lepanthes panope* is distinguished by the narrowly oblong lobes of the petals, and oblong blades of the lip without the longitudinal carina of *L. steyermarkii*, held to either side of a much longer column by short connectives, instead of far above by elongated connectives. Also in common with *L. steyermarkii*, the membranous appendix of the lip is appressed to the overlying stigma, but in *L. panope* the apex of the appendix is flabellate and ciliate.

**Lepanthes parmata** Luer & R. Escobar, Orquideología 18(2): 136-138, 1991.

Ety.: From the Latin *parmatus*, "armed with a small, light shield," in allusion to the thin, rounded blade of the lip.

**Plant** medium in size, epiphytic, caespitose; roots fine. Ramicauls erect, slender, 7-12 cm long, enclosed by 11-14, minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple beneath, elliptical, subacute, shortly acuminate, 4-5 cm long, 1.5-2.2 cm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a very congested, successively many-flowered raceme up to 15 mm long, borne behind the leaf by a slender peduncle 25-30 mm long; floral bracts 0.5 mm long; pedicels 3-4 mm long; ovary 2.5 mm long; **sepals** yellow, glabrous, carinate, the dorsal sepal ovate, acute, 5 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, margins smooth, the lateral sepals ovate, oblique, diverging, acute, margins minutely denticulate, 5 mm long, 2.5 mm wide, connate 1.5 mm, 2-veined; **petals** yellow, minutely pubescent, transversely bilobed, 1.5 mm long, 5 mm wide, 3-veined, with a minute marginal lobule between the lobes, the upper lobe oblong, subtruncate, the lower lobe narrowly triangular, obtuse; **lip** green, bilaminate, the blades glabrous, very thin, lunate, the

two blades connate medially over the column to form a thin, circular blade, 1 mm long and broad, the connectives narrow, elongate, barely forming a body, connate to the base of the column, the sinus thickened and retuse with an oblong, membranous, pubescent appendix; **column** stout, 1.5 mm long, the anther apical, the stigma ventral.

**Antioquia:** Parque Nacional Natural "Las Orquídeas," road from Venados above Carauta, right bank of Río Venados, alt. 1300-1350 m, 15 Feb. 1989, *A. Cogollo, D. Cárdenas, F. Ramírez & O. Alvarez 4044* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 14409.
**Risaralda:** along new road to TV antenna south of Pueblo Rico, alt. 2400 m, 14 May 1993, *C. Luer et al. 16820* (MO).

This species is characterized by the elliptical, shortly acuminate leaves suffused with purple; a long-pedicellate, congested raceme borne by a long peduncle; ovate, acute sepals; and bilobed petals with a minute lobule on the outer margin. The small lip with the thin blades connate into a circular lamina supported above the column by a pair of long, narrow connectives is the most remarkable character. The appendix is membranous and oblong. Similar Colombian species include *Lepanthes mucronata* and *L. agglutinata.*

**Lepanthes pastoënsis** Schltr., Repert. Spec. Nov. Regni Beih. 7: 97, tab. 33, n. 125, 1920.

Ety.: Named for Pasto, the community near where the species was collected.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4-12 cm long, enclosed by 7-9 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 3-5 cm long, 1.5-2 cm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a loose, strict, successively several-flowered raceme up to 17 cm long including the slender peduncle 4-6 cm long; floral bracts 2-3 mm long; pedicels 2-3 mm long; ovary 2 mm long; **sepals** orange with brown veins, glabrous, carinate, margins smooth, the dorsal sepal triangular, flat, acute, long-attenuate, 16-18 mm long, 7-8 mm wide, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals connate almost to the tip into an flat, acute, triangular synsepal, 16.5 mm long, 9 mm wide, each 2-veined; **petals** orange-brown, microscopically pubescent, transversely bilobed, 1.25 mm long, 4.5 mm wide, the lobes oblong with rounded apices, the lower lobe slightly smaller; **lip** orange-brown, bilaminate, ciliate, the blades oblong with the ends rounded, 3 mm long, the connectives cuneate, from the below the middle of the blade, the body connate to the base of the column, the appendix narrowly triangular, acute; **column** terete, 2 mm long, the anther apical, the stigma ventral.

**Cauca:** near Pasto, collected by *Ed. Klaboch s.n.* (Holotype destroyed at B, Lectotype designated here: tab. 33, n. 125 in Schlechter, 1920); Daza, near Pasto, flowered in cultivation at La Ceja by M. & O. Robledo, 24 Oct. 1979, *C. Luer 4328* (SEL).
**Huila:** east of Volcán Puracé, near Cauca border, Finca Merenberg, 2300 m, 3 Apr. 1986, *A. Gentry, E. Zardini & M. Monsalve 53974* (MO).
**Nariño:** along road from Incano on west margin of lake Laguna Cocha, alt. 2750 m, 23 July 1989, *C. H. Dodson & R. Escobar 18104* (MO).

With the triangular dorsal sepal and a similar triangular synsepal, the large rhombic flowers of this species are distinctive. Two or three flowers occur simultaneously in a long, distantly flowered raceme. The species is very similar to *Lepanthes elegantula* Schltr. of central Ecuador, but the latter differs with the dorsal sepal and synsepal being long-acuminate, and the synsepal partially cleft. With the exception of the larger size, the flowers are nearly identical to those of *L. capitanea* Rchb. f., known from nearby northern Ecuador. *Lepanthes capitanea* is also smaller vegetatively, and bears successive, single flowers spaced more closely together on a slightly flexuous rachis. *Lepanthes pastoënsis* often bears two or three simultaneous flowers on a strict rachis.

**Lepanthes penicillifera** Luer, Selbyana, 30(1): 11, 2009.

Ety.: From the Latin *penicillus,* "a painter's brush," and *-fir,* "bearing," referring to the appendix.

Syn.: [≡ *Lepanthes scopulifera* Luer, Revista Soc. Boliv. Bot. 4(1): 9, 2003, nom. illeg. hom., non *Lepanthes scopulifera* Luer & R. Escobar, 1997].

Ety.: From the Latin *scopulifer*, "bearing a little brush," referring to the appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3 cm long, enclosed by 4-5 microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-ovate, acute, 2.5 cm long, 1.1 cm wide, the base cuneate into a petiole 1.5 mm long. **Inflorescence** a very congested, distichous, successively several-flowered raceme, up to 3 mm long, borne behind the leaf by a slender peduncle 6-11 mm long; floral bracts oblique, echinate, 1 mm long; pedicels 1-1.5 mm long; ovary 2 mm long; **sepals** carinate, glabrous, margins smooth, the dorsal sepal broadly ovate, subacute, 2.5 mm long, 2.3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, 2.3 mm long, 1.5 mm wide, connate 0.6 mm, 2-veined; **petals** microscopically pubescent, transversely bilobed, 1-veined, the upper lobe broadly elliptical, rounded, 2 mm long, 1.4 mm wide, the lower lobe oblong-triangular, obtuse, 1.5 mm long, 0.75 mm wide; **lip** bilaminate, 0.75 mm long, with the blades broadly elliptical with rounded ends, shallowly concave, long-ciliate, the connectives cuneate, forming a broad body, connate to the base of the column, with the appendix a tuft of long cilia; **column** stout, 1 mm long, protruding beyond the blades, the anther dorsal and the stigma apical.

**Cauca:** without collection data, cultivated at Orquídeas del Valle, *A. Niessen & J. C. Uribe 036A* (Holotype: MO), C. Luer illustr. 19902.

This species is characterized by a small size, a caespitose habit, and a successively flowered raceme shorter than the ovate leaf. The sepals are subacute; the petals are transverse with large, obtuse lobes, the upper larger than the lower. The blades of the lip are small, elliptical, and long-ciliate. The connectives form a broad body with a small, brush-like appendix. The flowers of the similar *Lepanthes intonsa*, also known from Cauca, share ovate sepals and a lip with small, rounded blades, but the sepals of the latter are longer, the lip is ciliate only at the broad apex, and the petals are very deeply indented between the lobes.

In 2003, this species was mistakenly assigned the name *Lepanthes scopulifera*, a homonym for another Colombian species described in 1997.

**Lepanthes perdita** Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 61(3): 138, 1996.

Ety.: From the Latin *perditus*, "lost," referring to the lost data for the original collection.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, to 9 cm long, enclosed by up to 10 microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly ovate, acute, 5 cm long, 1.5 cm wide, the base cuneate into a petiole 3 mm long. **Inflorescence** a congested, distichous, successively flowered raceme, up to 1 cm long, borne by a filiform peduncle 15 mm long; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 1 mm long; **sepals** yellow, glabrous, broadly ovate, obtuse, margins smooth, the dorsal sepal 2.4 mm long, 2.4 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, the lateral sepals oblique, diverging widely, 2.4 mm long, 1.6 mm wide, 2-veined, connate for 1 mm; **petals** yellow with red border, cellular-pubescent, transversely bilobed, 0.75 mm long, 3.75 mm wide, the upper lobe broadly and obliquely ovate, obtuse, the lower obliquely triangular, obtuse, much smaller than the upper lobe; **lip** microscopically pubescent, bilaminate, the blades lunate, concave, incomplete above the middle, 1.2 mm long, both the apices and bases acute, incurved, the connectives short, broadly cuneate, the body connate to the base of the column, the sinus obtuse with a short, oblong appendix; **column** stout, 0.75 mm long, the anther and stigma apical.

**Valle del Cauca:** Buenaventura, Quebrada Yesqueros, old road between Cali and Buenaventura, alt. 50 m, 9 May 1997, *J. T. Otero & B. Angulo C. 1005* (CUVC, MO).

Also Ecuador (s. loc., Holotype, *Hirtz 2053*: MO).

The locality of the original Ecuadorian collection of this species was lost. It remained unknown until its subsequent collection in southern Colombia at a surprisingly low altitude. *Lepanthes perdita* is characterized by a medium size with a congested raceme of successive, very small flowers borne behind an ovate, acute leaf. The sepals are broadly ovate and obtuse. The petals are proportionally large, with the upper lobes overlapping above the column. The blades of the lip are lunate and incomplete above the middle, with both ends acute and incurved.

The sepals of the similar but larger flowers of *Lepanthes setifera* Luer & R. Escobar are translucent, and the petals are green edged with purple. The larger, rounded upper lobes of both species overlap above the column, but those of *L. setifera* are oblong rather than broadly ovate.

**Lepanthes petalolenta** Luer & R. Escobar, Orquideología 18(2): 139-141, 1991.

Ety.: From the Latin *petalus* and *-olentus*, "with petals markedly developed," referring to the proportionally large petals.

**Plant** small to medium in size, epiphytic, caespitose; roots fine. Ramicauls erect, slender, 2-4.5 cm long, enclosed by 6-7 blackish, nondilated, minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, shortly acuminate, 2-3.5 cm long, 1.3-2 cm wide, the base cuneate into a petiole 3 mm long. **Inflorescence** a very congested (more or less loose when beginning), successively many-flowered raceme up to at least 5 mm long, borne along the back surface of the leaf and usually surpassing the leaf by a slender peduncle 25-35 mm long; floral bracts 1.5 mm long; pedicels 2-3 mm long; ovary 1.5 mm long; **sepals** yellow, glabrous, carinate, margins smooth, the dorsal sepal ovate, acute, 5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, the lateral sepals ovate, oblique, diverging, acute, 5 mm long, 2 mm wide, connate 2 mm, 2-veined; **petals** yellow, microscopically pubescent, transversely bilobed, 1.5 mm long, 8.5 mm wide, 3-veined, the lobes narrowly triangular, narrowly obtuse, about equal in length; **lip** purple, minutely pubescent, bilaminate, the blades ovate, with the apices subtruncate, the bases rounded, 1.5 mm long, the connectives cuneate, the body broad, connate to the base of the column, the sinus thickened and pubescent with an oblong, pubescent appendix; **column** stout, 1.5 mm long, the anther apical, the stigma ventral.

**Antioquia:** Urrao, Parque Nacional Natural "Las Orquídeas," Quebrada El Guaguo, alt. 1390-1420 m, 12 Feb. 1989, *A. Cogollo, D. Cárdenas & O. Alvarez 3907* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 14406; Urrao, Parque Nacional Natural "Las Orquideas," Sector Calles, margen derecha del Río Calles, alt. 1240 m, 29 May 1988, *A. Cogollo & J. Ramírez 3051, 3046, 3052* (JAUM, MO).

This species is characterized by the elliptical, shortly acuminate leaves and a congested raceme borne by a long peduncle that usually lifts the raceme beyond the apex of the leaf. Most remarkable are the flowers, with proportionally large petals, nearly as long as the length of the dorsal and lateral sepals combined. The sepals and lip are unremarkable, and the appendix is small, oblong, short, and pubescent. *Lepanthes tetracola* Luer & R. Escobar, also known from Antioquia, has similar petals but lacking the indentation between the lobes; and a lip with blades that are narrowly oblong, glabrous with minutely ciliate apices rather than ovate and pubescent.

**Lepanthes petalopteryx** Luer & R. Escobar, Orquideología 19(2): 106, 1994.

Ety.: From the Greek *petalon*, "the petal," and *-pteryx*, "-winged," referring to the winglike petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-5 cm long, enclosed by 6-7 microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly ovate, acute, 3-4 cm long, 0.6-0.7 cm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme, up to 5 mm or more long, borne beside the leaf by a slender peduncle 10-12 mm long; floral bracts muricate, 1 mm long; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** pale yellow, glabrous, reflexed, margins microscopically denticulate, the dorsal sepal elliptical, obtuse, 3 mm long, 2.2 mm wide, 3-veined, connate to the lateral sepals for 0.5

mm, the lateral sepals ovate, oblique, diverging, obtuse, 3 mm long, 2 mm wide, connate only at the base, 2-veined; **petals** bright yellow with orange at the base, microscopically pubescent, transversely bilobed, 1 mm long, 3.5 mm wide, the lobes similar, obliquely subquadrate or oblong, obliquely truncate, with the inner angles shortly acuminate-obtuse, the outer angles subacute, the outer margin obtusely angled at the center; **lip** orange, microscopically pubescent, bilobed, reniform, surrounding the column, 2 mm long, 2 mm wide expanded, with the basal angles narrowly rounded, with the apex broadly rounded, shallowly incised; **column** 1.5 mm long, with the anther and the stigma apical.

**Chocó:** Carmen de Atrato, road to Guaduas, alt. 1600 m, collected by E. Valencia, 1991, flowered in cultivation at Colomborquídeas, 21 Dec. 1992, *R. Escobar 5061* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16563.

**Colombia:** collecting data unknown, flowered in cultivation at Ecuagenera, Galaceo, Ecuador, 4 Mar. 2001, *C. Luer, J. Luer & A. Hirtz 19633* (MO).

The short, congested raceme of *Lepanthes petalopteryx* is borne beside a narrowly ovate leaf. The flowers, with elliptical, obtuse sepals, are distinguished by large, winglike petals with nearly identical, obliquely subquadrate upper and lower lobes. The short column is surrounded by a reniform lip that is rounded when expanded, with a microscopic lobule at the base of a shallow apical incision. The smaller flowers of *L. cyclochila* are similar, but the smooth-margined sepals do not reflex; the lower lobe of the petals is shallowly bifurcated; and the subcircular lip recurves to hang below the column.

**Lepanthes phalloides** Luer & R. Escobar, Orquideología 21(2): 154, 1999.

Ety.: From the Greek *phalloides*, "phallus-like," in reference to the appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-4.5 cm long, enclosed by 10-18 microscopically ciliate lepanthiform sheaths with dilated ostia. **Leaf** erect, thickly coriaceous, sulcate, ovate, acute, slightly acuminate, 15-25 mm long, 7-9 mm wide, the base cuneate into a petiole ca. 1 mm long. **Inflorescence** a congested, subsecund, successively many-flowered raceme, up to 12 mm long, borne on top of the leaf by a filiform peduncle 5-10 mm long; floral bracts 1 mm long; pedicels overlapping, 1.5 mm long; ovary 1.5 mm long; **sepals** yellow, glabrous, carinate-spiculate, with the inner three-fourths concave, margins denticulate, the dorsal sepal triangular, acute, 3.3 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals completely connate into an ovate, acute synsepal, 3 mm long, 2.6 mm wide, each 2-veined; **petals** red, long-pubescent, transversely bilobed, 0.6 mm long, 3 mm wide, the upper lobe obliquely oblong, obtuse, the lower lobe narrowly triangular, acute, acuminate, with an intermediate lobe, arcuate, slender, 0.6 mm long; **lip** rose with red edges, bilaminate, the blades pubescent, elliptical with rounded ends, 1 mm long, the connectives short, broadly cuneate, the body broad, concave, connate to the base of the column, the sinus protuberant with the appendix oblong, 0.5 mm long, with the apex concave with distinct margins, minutely pubescent; **column** 1 mm long, with the anther apical and the stigma ventral.

**Boyacá:** El Taladró, collected by E. Valencia, Apr. 1992, flowered in cultivation at Colomborquídeas, 5 May 1993, *C. Luer 16728* (Holotype: MO).

This species is known only from the original collection in the Eastern Cordillera of Colombia. The small, narrowly ovate, thickly coriaceous leaf is sulcate medially where the inflorescence lies. The sepals are completely connate with denticulate margins, and the concave interior resembles that of the Bolivian *Lepanthes nycteris* Luer & R. Vásquez. In pickled flowers, a brownish cellular pigmentation is seen on the peripheral fourth of the sepals that is not concave. Medial to the pigmentation the sepals are abruptly concave. The lateral sepals are completely connate into an ovate, concave synsepal. The petals are long-pubescent with an oblong upper lobe; a long, narrow lower lobe; and a filiform, shorter middle lobe. The blades of the lip are borne by short, broad connectives forming a broad, concave body. A prominent, elongate appendix with a concave apex protrudes from the anterior margin.

**Lepanthes pictoris** Luer & Thoerle, Harvard Pap. Bot. 16(2): 332, 2011.

Ety.: From the Latin *pictoris*, "of a painter," referring to the lip like a painter's palette.

**Plant** small, epiphytic, rhizome and roots unknown. Ramicauls slender, erect, 4-4.5 cm long, enclosed by 7-8 long-ciliate lepanthiform sheaths with dilated ostia. **Leaf** erect, coriaceous, broadly elliptic, obtuse, shortly acuminate, 20 mm long, 15 mm wide, the rounded base abruptly contracted into a petiole 3 mm long. **Inflorescence** 2-3 erect, congested, successively, many-flowered racemes, up to 18 mm long, including the peduncle ca. 5 mm long, borne behind the leaf; floral bracts oblique, 1-1.2 mm long; pedicels 1-1.2 mm long; ovary 5 mm long; **sepals** yellow, glabrous, the dorsal sepal ovate, margins minutely ciliate, the apex acute with a broad cauda 1 mm long, 4 mm long including the cauda, 2.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, margins conspicuously ciliate, acute, acuminate into slender caudae 1 mm long, connate 1 mm, the blade 4 mm long, 2 mm wide, 1-veined; **petals** red, cellular, transversely bilobed, the lobes narrowly triangular, acute, attenuate, 0.4 mm long, 3.5 mm wide, the upper lobe 1.5 mm long, the lower lobe 2 mm long; **lip** red, cellular, broadly subcordate or subcircular, 1.8 mm long, 1.8 mm wide, the apex broadly bilobed, each lobe 0.5 mm long, with a microscopic, triangular appendix in the sinus, the body 1 mm long, the base similarly bilobed, connate to the base of the column; **column** 1 mm long, the anther and stigma apical.

**Norte de Santander:** Páramo de Mefué, collected by J. L. Aguirre, Jan. 2008, flowered in cultivation by A. Carrillo, 12 June 2009, *L. Thoerle 122A* (Holotype: MO), C. Luer illustr. 21472.

This species from the Eastern Cordillera of Colombia is characterized by long-ciliate lepanthiform sheaths, dilated at the ostia; single-veined lateral sepals; slender, long-attenuate lobes of the petals; and a circular lip without blades, notched at the apex to resemble a painter's palette. Some forms of *Lepanthes aquila-borussiae* with longer petals resemble *L. pictoris*, but the lip of the former is subequal in length to the column, with a protruding descending sinus bearing a minute, stalked, pubescent appendix.

**Lepanthes pilosiaures** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(3): 262, 1984.

Ety.: From the Latin *pilosus,* "hairy," and *aures,* "ears," referring to the pubescent petals.

**Plant** medium in size, epiphytic, caespitose; roots slender, filamentous. Ramicauls slender, erect, 5-10.5 cm long, enclosed by 8-10 close, microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple beneath, ovate, 4.5-6 cm long, 2-2.7 cm wide, the apex acute, acuminate, minutely apiculate, the base rounded, contracted into a petiole 3 mm long. **Inflorescence** a very congested, successively flowered raceme up to 15 mm long, borne behind the leaf by a filiform peduncle 12-20 mm long; floral bracts 1 mm long; pedicels 4-5 mm long; ovary 2 mm long; **sepals** translucent light yellow, glabrous, broadly ovate, carinate, abruptly acute, margins smooth, the dorsal sepal 4.5 mm long, 3.75 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, connate 1 mm, 4.5 mm long, 2.25 mm wide together, each 2-veined; **petals** yellow, pubescent, transversely bilobed, 1 mm long, 4 mm wide, with a narrow, linear lobe 0.5 mm long from the outer margin near the middle, the upper lobe suffused with red-brown, rectangular-oblong, truncate, the lower lobe narrowly triangular, acute; **lip** dull purple-brown with green veins, the blades thin, minutely ciliate, adherent medially over the column, oblong, 1.8 mm long, the apices obtuse, obliquely truncate, the bases rounded, the connectives cuneate, from the middle of the blades, the body narrow, with a ligulate, retuse, concave, pubescent appendix nearly 1 mm long occupying the sinus; **column** 1.6 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Yarumal, Ratón Pelado, alt. 2700 m, 22 May 1983, *R. Escobar et al. 2663* (Holotype: SEL), C. Luer illustr. 9108.

*Lepanthes pilosiaures* is distinguished by broadly ovate sepals with smooth margins; conspicuously pubescent petals with the upper lobes obtusely truncate; and a lip with the connectives originating from the middle of the blades and a large, ligulate appendix.

A number of Colombian species are similar vegetatively and florally. *Lepanthes pilosiaures* resembles *L. janitor*, but the sepals of *L. janitor* are denticulate, and its column has a large rostellar flap. The inflorescence of the similar *L. agglutinata* is secund, bearing flowers with sepals denticulate rather than smooth-margined. The petals of *L. posadae* are distinguished by scimitar-shaped, much longer lower lobes; and the column is bifurcated with a bilobed stigma.

**Lepanthes pinnatula** Luer & R. Escobar, Orquideología 20(3): 307-308, 1997.

Ety.: From the Latin *pinnatulus*, "with a little feather," referring to the appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls proportionally stout, erect, 10-25 mm long, enclosed by 6-7 minutely ciliate lepanthiform sheaths with dilated, acuminate ostia. **Leaf** erect, coriaceous, margined, suffused with purple beneath, ovate, subacute, 10-16 mm long, 6-7 mm wide, the base cuneate, contracted into a petiole 1 mm long. **Inflorescence** a lax, successively 2- to 3-flowered raceme up to 3 mm long, borne behind the leaf by a filiform peduncle 5-7 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 1.2 mm long; **sepals** yellow, glabrous, membranous, carinate, widely spread, margins denticulate, the dorsal sepal ovate, acute, acuminate, 3.5 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals slightly suffused with purple, 4 mm long, connate 2.5 mm into an oblong, bifid synsepal, 2.5 mm wide, with the apices acute, acuminate, each sepal 1-veined; **petals** minutely ciliate-pubescent, transversely bilobed, the upper lobe red-orange, erect, subfalcate-oblong, oblique, acute, 2 mm long, 0.75 mm wide, the lower lobe yellow, obliquely triangular, obtuse, incurved, 0.75 mm long, 0.75 mm wide; **lip** white, suffused with purple medially, bilaminate, the blades minutely ciliate-pubescent, ovate, with the bases rounded, decurved, the apices obtuse, 1.3 mm long, the connectives short, cuneate, the body connate to the base of the column, the sinus acute, with a slender, elongated, pedunculated, long-pubescent appendix; **column** 1.2 mm long, the anther apical and the stigma subapical.

**Antioquia:** epiphytic in cloud forest south of the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17676* (Holotype: MO).

This very small species is apparently endemic in the Western Cordillera of Colombia. It is characterized by elliptical, margined leaves borne by comparatively stout ramicauls with ciliate sheaths, and a loose, few-flowered inflorescence not exceeding the leaf. The sepals are acute and denticulate with short-acuminate apices, the laterals single-veined. The ovate blades of the lip are not remarkable, but the elongate, pedunculated, long-ciliate appendix resembles a tiny feather.

The flowers of the equally minute *Lepanthes vieirae* Luer & R. Escobar, from the hot lowlands of western Colombia, are similar, with single-veined, denticulate sepals, petals with an upper lobe much larger than the lower lobe, and a lip with a ciliate appendix. *Lepanthes vieirae* is best distinguished by the sepals with acute apices; petals that are transversely narrowly elliptical; and a convex lip with rounded bases that do not curve downward.

**Lepanthes planadensis** Luer & R. Escobar, Orquideología 18(2): 141-143, 1991.

Ety.: Named for the La Planada Science Center, Ricaurte, Colombia, where this species is in cultivation.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 8-11 cm long, enclosed by 10-15 glabrous lepanthiform sheaths, the dilated ostia microscopically ciliate-scabrous. **Leaf** spreading, coriaceous, narrowly ovate, acute, 4-5.5 cm long, 1-1.4 cm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a congested, secund, successively several-flowered raceme up to 20 mm long, borne on top of the leaf by a filiform peduncle 5-20 mm long; floral bracts smooth, 1 mm long; pedicels 2 mm long; ovary 1.5 mm long; **sepals** purple, glabrous, carinate, broadly ovate, margins smooth, the obtuse apices shortly acuminate, the dorsal sepal 4 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, 4 mm long, 2.25 mm wide,

2-veined, connate 1.5 mm; **petals** dark red-purple, transversely bilobed, glabrous (cellular-glandular), 1 mm long, 5 mm wide, the lobes triangular, narrowly obtuse, about equal in size; **lip** dark red-purple, glabrous (cellular-pubescent), bilaminate, the blades broadly elliptical with rounded ends, 2 mm long, the apices ciliate, the connectives broadly cuneate, forming a broad body, connate to the base of the column, the appendix oblong-ovoid, long-pubescent; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Nariño:** Mun. Ricaurte, collected in the cloud forest around La Planada, alt. 1800 m, flowered in cultivation at the La Planada Science Center, 25 Jan. 1987, *C. Luer 12487* (Holotype: MO); La Planada, in pluvial forest south of Ricaurte on road from Pasto to Tumaco, alt. 1820 m, 21 July 1989, *C. H. Dodson, R. Escobar & E. Valencia 18063* (MO).

This species seems to have affinities with several vaguely defined groups, including the "*Lepanthes mucronata* group." Narrowly ovate, spreading leaves support a short, secund raceme of successive, purple flowers. The sepals are obtuse with shortly acuminate apices; the petals are large with more or less similar, narrowly obtuse, triangular lobes; the lip has broadly elliptical blades and a small, long-pubescent appendix. Among many species, *Lepanthes palaga* is perhaps the most similar, but with a more densely congested raceme bearing smaller, yellow flowers, with a lip with a proportionally large, pubescent, concave appendix.

**Lepanthes plectilis** Luer & Hirtz, Amer. Orchid Soc. Bull. 54: 166, 1985.

Ety.: From the Latin *plectilis*, "intricate," in reference to the complicated appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, suberect, 2-8 cm long, enclosed by 5-9 close, microscopically scabrous lepanthiform sheaths. **Leaf** coriaceous, spreading to horizontal, margined, with purple reticulation, especially beneath, narrowly ovate, acute, 2.5-4.5 cm long, 0.6-1.0 cm wide, the base narrowly cuneate into a petiole 1.5 mm long. **Inflorescence** a congested, flexuous, successively flowered raceme up to 8 mm long, borne on top of the leaf by a filiform peduncle 4-20 mm long, commonly produced in pairs, one with a short peduncle, the other with a longer peduncle; floral bracts 1 mm long, lightly echinate; pedicels 1.25 mm long; ovary sulcate, 2 mm long; **sepals** yellow, glabrous, carinate, ovate, subacute to obtuse, margins microscopically cellular-denticulate, the dorsal sepal 2.5 mm long, 1.75 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals suffused with orange along the midvein, oblique, diverging, 2.25 mm long, 1.5 mm wide, 2-veined, connate 0.5 mm; **petals** orange, microscopically pubescent, transversely oblong-bilobed, 0.75 mm long, 1.75 mm wide, the ends rounded, the upper lobe larger; **lip** orange-brown, microscopically pubescent, the blades ovate with rounded ends, the triangular connectives forming a narrow body, connate to the base of the column, the appendix pubescent, oblong, with a terminal bifid segment with a pair of microscopic, pedunculate lobules; **column** clavate, 1 mm long, the anther dorsal, the stigma ventral.

**Colombia:** without collecting data, collected by C. Luer, 1988, flowered in cultivation by the Jesups in Bristol, Connecticut, 21 May 1992, *C. Luer 16254* (MO).

Also Ecuador (Napo, Holotype, *A. Hirtz 1861*: MO; Pastaza).

*Lepanthes plectilis* is similar to *L. popayanensis* Luer & R. Escobar, known from the vicinity of Popayán in Cauca. *Lepanthes popayanensis* differs with plain, ovate leaves, rather than reticulated and narrowly ovate; and sepals with smooth margins, acuminate, and acute, rather than microscopically denticulate and obtuse. The lips of the two species are similar, with triangular connectives, narrow bodies, and intricate, segmented appendices.

**Lepanthes pleurorachis** Luer, Phytologia 54(5): 363, 1983.

Ety.: From the Greek *pleurorachis*, "a ribbed rachis," in allusion to the inflorescence.

**Plant** small, weak, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2.5-6 cm long, enclosed by 6-8 minutely scabrous lepanthiform sheaths. **Leaf** erect to suberect, thinly coriaceous,

narrowly ovate, acuminate, acute, 16-28 mm long, 8-10 mm wide, the base obtuse to rounded, contracted into a petiole 1-2 mm long. **Inflorescence** an extremely congested, distichous, long-pedicellate, successively many-flowered raceme up to 5 mm long, borne by a slender peduncle up to 6 mm long along the back of the leaf; floral bracts 0.5 mm long; pedicels 1 mm long, closely arranged in 2 rows; ovary 1 mm long; **sepals** yellow, glabrous, elliptical, subequal, acute, reflexed, free nearly to the base, margins smooth, the dorsal sepal 1.5 mm long, 0.8 mm wide, 3-veined, the lateral sepals diverging, 1.25 mm long, 0.8 mm wide, 2-veined; **petals** orange, transversely bilobed, 0.3 mm long, 2 mm wide, the upper lobe triangular, oblique, acute, with a second point midway on the inner margin, the lower lobe equally long, falcate, acute; **lip** red-brown, ciliate, transversely bilobed-cordate, 0.6 mm long, 0.6 mm wide, the apex retuse between 2 rounded lobes and with a minute apiculum in the sinus, the basal lobes rounded, to either side of the column, the base connate to the undersurface of the basal third of the column; **column** 0.5 mm long, the anther and stigma apical.

**Antioquia:** Río Caldera, alt. 1650 m, collected by E. Valencia, 23 June 1983, flowered in cultivation at Colomborquídeas, El Retiro, 13 Jan. 1984, *R. Escobar 3195* (MO), C. Luer illustr. 9490; Represa de Miraflores, collected by R. Escobar 3481, flowered in cultivation at Colomborquídeas, 6 Apr. 1988, *C. Luer 13027* (MO); epiphytic on Ericaceae, Parque Nacional Natural "Las Orquídeas," Sector Calles, margen izquierda del Río Calles, alt. 1460 m, 11 Feb. 1989, *A. Cogollo, D. Cárdenas & O. Alvarez 3862* (MO).

**Valle del Cauca:** epiphytic on a fallen branch of a Rubiaceae shrub, Mun. Dagua, along the old Cali-Buenaventura road, Digua river watershed, 10 km below El Queremal, alt. ca. 1000 m, 24 Jan. 2011, E. Calderón, flowered in cultivation at El Refugio Nature Reservation, Nov. 2011, *E. Calderón 609* (HPUJ).

Also Ecuador (Pichincha, Holotype, *Luer et al. 7373*: SEL).

This delicate little species occurs locally in the forests of Colombia's Western Cordillera and on the western slopes of Pichincha in Ecuador. It is easily distinguished by the dense, distichous, long-pedicellate raceme borne behind a small, narrowly ovate leaf. The flowers are minute, with similar, elliptical, reflexed, essentially free sepals; acute, transverse petals, the upper lobe inconstantly bearing a small angle on the inner edge; and a ciliate, cordate lip, shallowly to significantly retuse at the rounded apex with a minute apiculum.

Several species from Colombia share the characteristic small flowers with strongly reflexed sepals. *Lepanthes refracta* Luer differs in the longer ramicaul bearing a subcircular leaf, abruptly contracted into a linear acumen; and flowers with blunt sepals with the laterals obtuse. The vegetatively similar *L. georgii* is readily differentiated by its petals with linear, acute, diverging lobes with a minute lobule between the lobes.

**Lepanthes pleurothallopsis** Luer & R. Escobar, Orquideología 19(2): 107, 1994.

Ety.: Named for the similarity of the plant to the genus *Pleurothallis*.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3.5-6 cm long, enclosed by 5-6 coarsely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 2.5-4 cm long, 1-1.8 cm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a long, flexible, loose, successively many-flowered raceme, 2-3 flowers open simultaneously, up to 30 cm or more long including the peduncle 5-7 cm long, the flowers large, incompletely opening, non-resupinate; floral bracts 3.5 mm long; pedicels 3.5 mm long; ovary 2.5 mm long; **sepals** white with broad, red stripes, glabrous, margins minutely erose, the dorsal sepal ovate, acute, acuminate, concave, 13-17 mm long, 6 mm wide, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals flat to convex, connate 10 mm into a narrowly ovate, bifid synsepal, 14-18 mm long, 6.5 mm wide, each 2-veined, the apices acute, acuminate; **petals** white with red margins, microscopically pubescent, transversely bilobed, 1.4 mm long, 3.5 mm wide, the lobes similar, triangular, with rounded apices; **lip** bilaminate, the blades oblong, glabrous with long-ciliate margins, 2.5 mm long, with the apices slightly everted, rounded, with the blades deflexed above the middle, more or less erect toward the base, the connectives cuneate below the middle, the body connate to the base of the column, with the appendix triangular, acute, concave, hinged in the sinus; **column** 2 mm long, with the anther dorsal and the stigma ventral.

**Quindio:** Mun. Salento, alt. 2800 m, collected by E. Valencia, Jan. 1991, flowered in cultivation at Colomborquídeas, 12 Dec. 1992, *R. Escobar 5007* (Holotype: MO), C. Luer illustr. 16569.

This remarkable species with its long raceme of large, partially open, non-resupinate flowers superficially resembles some species of *Pleurothallis*. A few of the colorful flowers are open simultaneously as the flexible raceme gradually lengthens, reaching at least 30 centimeters. The sepals, white with conspicuous red stripes, are incompletely spreading so that the typically *Lepanthes*-like petals and lip are not easily visible, reinforcing the appearance of a species of *Pleurothallis*. The long, pointed, concave "dorsal sepal" is lowermost in the natural position on the rachis.

**Lepanthes popayanensis** Luer & R. Escobar, Orquideología 21(2): 156, 1999.

Ety.: Named for the city of Popayán in the department of Cauca, where the species was collected.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4-5 cm long, enclosed by 6-8 microscopically ciliate lepanthiform sheaths, with the apices long-acuminate. **Leaf** erect, thinly coriaceous, ovate, acute, 3-4 cm long, 0.9-1.4 cm wide, contracted below into a petiole 2 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 8 mm long, borne beneath the leaf by a peduncle ca. 10 mm long; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 2 mm long; **sepals** cellular-glandular, subcarinate, margins smooth, the dorsal sepal ovate-triangular, acute, 3.75 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, acute, slightly acuminate, 3.25 mm long, 1.6 mm wide, 2-veined, connate 0.5 mm; **petals** microscopically pubescent, transversely bilobed, 0.8 mm long, 2 mm wide, the upper lobe larger, oblique, oblong, round at the apex, the lower lobe triangular, round at the apex; **lip** bilaminate, with the blades glabrous, narrowly oblong, with the ends rounded, 1.75 mm long, the connectives cuneate, the body narrow, connate to the base of the column, the sinus acute with the appendix long-pubescent, oblong, with a bifid terminal segment; **column** 1.5 mm long, the anther dorsal and the stigma ventral.

**Cauca:** near Popayán, collected by J & L Orchids, 1292-399, flowered in cultivation, Dec. 1992, *C. Luer 16531* (Holotype: MO); same collection, flowered in cultivation by J. Hermans, 903, in Enfield, England, 1993, *C. Luer 16546* (MO).

This species is not distinguished by any single character, but can be identified by a combination of characters. The plant is small, with an ovate leaf borne by ramicauls with sheaths with long-acuminate apices. The congested inflorescence is borne behind the leaf. The sepals are acute; the lobes of the petals are broad with rounded apices; and the blades of the lip are narrowly oblong and glabrous. The long-pubescent appendix terminates in a bifid segment. The leaves of the similar *Lepanthes plectilis* are narrowly ovate and reticulated; the sepals are minutely denticulate and obtuse. The lips of the two species are similar, with triangular connectives; a narrow body; and an intricate, segmented appendix.

**Lepanthes porracea** Luer & R. Escobar, Orquideología 20(3): 309-310, 1997.

Ety.: From the Latin *porraceus*, "leek-green," referring to the flowers.

**Plant** medium to large in size, epiphytic, caespitose; roots very slender. Ramicauls stout, thick, erect, 6-12 cm long, enclosed by 12-15 coarsely ciliate lepanthiform sheaths with oblique ostia. **Leaf** erect, coriaceous, elliptical-ovate, acute, acuminate, 4-6.5 cm long, 1.7-2.2 cm wide, the base cuneate, contracted into a petiole 3-4 mm long. **Inflorescence** a distichous or subsecund, successively several-flowered raceme lax below to congested above, borne behind the leaf by a filiform peduncle 20-30 mm long; floral bracts 2 mm long; pedicels 2-2.5 mm long; ovary 1.75 mm long; **sepals** deep green, glabrous, membranous, carinate, widely spread, margins smooth, the dorsal sepal ovate-triangular, acute, acuminate, 5 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, 5 mm long, apices approximate into an ovate, split synsepal, 3.75 mm wide, connate 1 mm, each 2-veined, with the apices thickened, acute; **petals** green, suffused with purple,

microscopically pubescent, transversely bilobed, 1.25 mm long, 3.5 mm wide, the lobes broadly oblong with rounded apices, the upper lobe longer than the lower lobe; **lip** green with purple margins, bilaminate, the blades microscopically ciliate, elliptical, flat, with the ends rounded, 1.6 mm long, the connectives short, broad, the body connate to the base of the column, the sinus bifid, with the appendix small, densely pubescent; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Risaralda:** San Antonio del Chamí, collected by E. Valencia, Nov. 1992, flowered in cultivation at Colomborquídeas, 3 June 1995, *C. Luer 17721* (Holotype: JAUM; Isotype: MO).

Vegetatively, *Lepanthes porracea* is distinguished by thick, strict ramicauls with coarsely ciliate sheaths. The inflorescence, loosely flowered below and congested above, is shorter than and borne behind the elliptical leaf. The sepals are bright deep-green, the dorsal acuminate and the laterals approximate into an ovate, split synsepal with thickened, acute apices. The green petals are transversely oblong. The ovate blades of the lip are green; the appendix is small and pubescent.

**Lepanthes posadae** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(5): 479, 1984.

Ety.: Named in honor of Sr. Jaime Posada of Medellín, Colombia, in whose nursery Colomborquídeas this species was cultivated.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 6-20 cm long, enclosed by 11-23 minutely ciliate lepanthiform sheaths. **Leaf** suberect to spreading, thinly coriaceous, convex, elliptical-ovate, acute, acuminate, 5-10 cm long, 1.5-3.5 cm wide, the base cuneate to rounded, contracted into a petiole 3-4 mm long. **Inflorescence** a congested, successively many-flowered raceme up to 15 mm long, borne by a slender peduncle 1.5-5 cm long along the back of the leaf; floral bracts 1-1.5 mm long; pedicels 3-4 mm long; ovary 2-4 mm long; **sepals** light green, glabrous, carinate, ovate, margins smooth, the dorsal sepal 3.5-5.5 mm long, 2.75-3.75 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals connate 2-2.5 mm into a broadly ovate, bifid synsepal, 3.6-5.5 mm long, 3.2-4.5 mm wide, each 2-veined, the apices diverging, acute; **petals** green with purple margins, pubescent, transversely bilobed, 1.5 mm long, 5-6 mm wide, with a setiform, purple marginal midlobe 1-1.5 mm long, the upper lobe oblong, truncate, the lower lobe longer, narrowly falcate-triangular, oblique, long-attenuate; **lip** yellow, suffused with purple, bilaminate, the blades thin, oblong, with rounded ends, 1.5-2 mm long, minutely ciliate, adherent medially over the column, the connectives narrowly oblong, oblique, the body narrow, connate to the base of the column, the sinus filled with a large, oblong, ciliate, concave appendix with a truncate, bilobulate apex; **column** bright purple, bifurcate, 2-2.5 mm long, the anther dorsal, the stigma ventral, bilobed.

**Chocó:** San José del Palmar, alt. ca. 1900 m, 1979, collected by L. & J. Posada et al., flowered in cultivation at Colomborquídeas, El Retiro, 21 Apr. 1983, *C. Luer 8743* (Holotype: SEL); San José del Palmar, collected by E. Valencia, March 1993, flowered in cultivation at Colomborquídeas, 16-19 May 1993, *C. Luer 16935* (MO).

**Cauca:** Popayán, collected by Janet Kuhn, cultivated by A. & P. Jesup in Bristol, Connecticut, 26 Apr. 1987, *C. Luer 12885A* (MO).

Also Ecuador (Imbabura).

This species, similar to the widespread *Lepanthes agglutinata*, occurs locally on the western declivities of the Andes of Colombia and Ecuador. It is characterized by the large size; thin, ovate, acuminate leaves with the congested inflorescence borne along the back side; green petals with a purple margin, the narrowly triangular lower lobe much longer than the oblong upper lobe, and a protruding marginal process; and thin blades of the lip adherent over the column. The appendix is large, oblong, and ciliate.

A number of Colombian species are similar vegetatively and florally. *Lepanthes janitor*, *L. agglutinata*, and *L. pilosiaures* have petals with lobes subequal in length, with an uncinate process between the lobes. None of these three shares the unusual forked column and the bilobed stigma beneath.

**Lepanthes praemorsa** Luer & R. Escobar, Orquideología 18(2): 143-145, 1991.

Ety.: From the Latin *praemorsus*, "bitten off, chewed," referring to the upper margin of the broadly truncate upper lobe of the petals.

**Plant** small to medium in size, epiphytic, caespitose; roots fine. Ramicauls slender, erect, 3-12 cm long, enclosed by 10-13 microscopically ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, more or less reticulate, elliptical, with the apex acute and narrowly acuminate, 2.5-6 cm long, 1-2.5 cm wide, the base broadly cuneate into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 8 mm long, borne on the dorsum of the leaf by a filiform peduncle 5-30 mm long; floral bracts 1.25 mm long; pedicels 3 mm long; ovary 1.5 mm long; **sepals** translucent yellow, glabrous, ovate, acute, margins smooth, the dorsal sepal 4 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 4 mm long, 1.75 mm wide, connate 1.25 mm, 2-veined; **petals** green, microscopically pubescent, transversely bilobed, 1.25 mm long, 3.75 mm wide, with a filiform, lateral midlobe 1.25 mm long, the upper lobe suboblong, truncate, the upper edge minutely erose, the lower lobe triangular, acute, shorter than the upper lobe, indented between the lobes; **lip** rose, bilaminate, the blades thin, cellular-erose, oblong with rounded apices and bases, 2 mm long, adherent medially over the column, the connectives oblong, narrow, from the anterior half of the blades, the body thick, convex, connate to the column above the base, the appendix thick, broadly triangular, convex, the apex thick, obtuse, pubescent; **column** slender, 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Yarumal, epiphytic in cloud forest remnant above El Cedro, alt. 2000 m, 16 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14207* (Holotype: MO), *14210* (MO).

**Putumayo:** San Miguel, La Unión, alt. unknown, July 1999, collector unknown, flowered in cultivation at Colomborquídeas, June 2009, *L. Thoerle 144* (MO).

*Lepanthes praemorsa* is distinguished by the small size; sepals with smooth margins; filiform lateral lobules of the petals; and the convex body of the lip with a short, triangular appendix. It is most similar to *L. heteroloba* and *L. quandi*, two other Colombian species in the "*Lepanthes mucronata* group." Both of these species have sepals with denticulate margins and glabrous petals, unlike the smooth-margined sepals and pubescent petals of *L. praemorsa.*

**Lepanthes profusa** Luer & Hirtz, Orchidee (Hamburg) 41: 10, 1990.

Ety.: From the Latin *profusus*, "profuse," referring to the floriferous character of the species.

**Plant** large, epiphytic, shortly ascending, caespitose; roots coarse. Ramicauls stout, erect, 10-40 cm long, enclosed by 10-14 glabrous, closely fitting lepanthiform sheaths, microscopically ciliate on the margins of the upper ostia. **Leaf** erect, coriaceous, elliptical-ovate, acute to lightly acuminate, 7-12 cm long, 2-5 cm wide, the base rounded or broadly cuneate, contracted into a petiole 3-6 mm long. **Inflorescence** racemose, successively many-flowered, congested, up to 5 cm long including the peduncle 1.5-2 cm long, borne behind the leaf; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 2.5 mm long; **sepals** pale yellow, glabrous, carinate, ovate-triangular, acute, slightly acuminate, margins denticulate, the dorsal sepal 6-7 mm long, 4-5 mm wide, 3-veined, connate to the lateral sepals for 1.5-2 mm, the lateral sepals oblique, diverging, 6.5-7 mm long, 3 mm wide, connate 1.5-2.5 mm, 2-veined; **petals** yellow with red inner margin, glabrous, transversely bilobed, 1-1.5 mm long, 3.5-4 mm wide, narrowed between the lobes, the lobes subequal, the upper lobe broadly ovate, the lower lobe oblong, narrower, with the ends rounded; **lip** bilaminate, the blades red-purple, elliptical, indented above the middle, 2.25 mm long, glabrous, the rounded apices ciliate, the connectives shortly cuneate, the body broad, connate to the base of the column, the sinus obtuse, with a minute, biglandular appendix; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Meta:** Macizo de Sumapáz vertiente oriental de la cordillera, hoya de la Quebrada El Buque, alt. 3400 m, July 11-12 1981, *Santiago Díaz P. 2785* (MO).

Ecuador (Loja, Holotype, *C. Luer et al. 10751*: MO; Zamora-Chinchipe).

This large, robust species is found in high altitude cloud forest in southern Ecuador with a single collection from the Eastern Cordillera of Colombia. It is identified by tall, stout ramicauls clad in essentially glabrous, nondilated

lepanthiform sheaths; elliptical-ovate, acuminate leaves; short inflorescences laxly flowered below, becoming congested above; denticulate, broad but acuminate sepals; glabrous, bilobed petals with a constriction near the middle; and the lip with elliptical blades, ciliate at the apices, with a minute, biglandular appendix.

*Lepanthes profusa* was considered to be synonymous with *L. caudatisepala* (Luer 1996b), but recent examination of preserved specimens argues for maintaining separate species. *Lepanthes caudatisepala* is distinguished by flowers with smooth-margined sepals and a lip with flat blades, while those of *L. profusa* have denticulate sepals and a lip with the blades indented above the middle.

**Lepanthes prolifera** Foldats, Bol. Soc. Venez. Ci. Nat. 28: 247, 1969.

Ety.: From the Latin *prolifer*, "prolific," referring to the habit.

**Plant** medium in size, epiphytic, prolific; roots fine. Ramicauls slender, erect, producing an additional ramicaul from the apex, 3-12 cm long, enclosed by 4-8 lepanthiform sheaths with ciliated ostia. **Leaf** erect, coriaceous, elliptical, acute, 2-5 cm long, 0.5-1.5 cm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 10 mm long, borne by a filiform peduncle up to 18 mm long; floral bracts 2.5 mm long; pedicels 2.5 mm long; ovary 2 mm long; **sepals** red-brown, glabrous, carinate, margins minutely denticulate, the dorsal sepal ovate, acute, acuminate, 9 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for ca. 1 mm, the lateral sepals ovate, oblique, with acuminate apices diverging, 9 mm long, connate 5 mm into a bifid synsepal 5 mm wide, each 2-veined; **petals** orange, red medially, microscopically pubescent, transversely bilobed, 0.9 mm long, 3.75 mm wide, with the lobes suboblong with rounded apices, the upper lobe slightly larger than the lower lobe; **lip** red, bilaminate, the blades oblong with rounded apices and bases, minutely pubescent, 2 mm long, the connectives broad, the body thick, connate to the column above the base, the appendix thick, triangular, concave, the apex long-pubescent; **column** 2 mm long, the anther apical, the stigma ventral.

**Arauca:** Sierra Nevada del Cocuy, Monte El Tovo, alt. 2900 m, 30 May 1982, *C. Luer & R. Escobar 7996* (SEL).

Also Venezuela (Táchira, Holotype, *J. Steyermark, G. C. K. & E. Dunsterville 101198*: VEN).

This prolific species occurs at high altitudes in westernmost Venezuela and adjacent Colombia. The successively flowered raceme is shorter than the leaf. The sepals are acuminate; the petals are simple and bilobed; the blades of the lip are oblong; and the appendix is short, thick, and long-pubescent. It is similar to *Lepanthes oreibates*, but the latter is distinguished by a larger elliptical leaf, reaching six centimeters in length; sepals with smooth margins; and a clinandrium protruding beyond the blades of the lip.

**Lepanthes pterygion** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(7): 720, 1984.

Ety.: From the Greek *pterygion,* "a small wing," referring to the minute, winged lip.

**Plant** small, epiphytic, caespitose; roots comparatively coarse. Ramicauls erect, slender; 1-4 cm long, enclosed by 6-7 minute, microscopically ciliate lepanthiform sheaths with dilated ostia. **Leaf** suffused with purple, erect, coriaceous, ovate, acute to acuminate, 1-2 cm long, 0.6-1 cm wide, the rounded base contracted into a petiole 0.5 mm long. **Inflorescence** a dense, secund, successively flowered raceme up to 8 mm long, borne by a filiform peduncle 4-20 mm long; floral bracts 0.5 mm long; pedicels 2 mm long; ovary 1.5 mm long; **sepals** translucent magenta with darker veins, glabrous, margins smooth, the dorsal sepal triangular-ovate, acute, 5 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, obtuse, diverging, connate 2.5 mm, 4.5 mm long, 4 mm wide together, each 2-veined; **petals** dark red-purple, microscopically pubescent, transversely elliptical, 0.5 mm long, 2.75 mm wide, the lobes subequal, narrowly triangular, acute; **lip** white, suffused with rose, microscopically pubescent, transversely elliptic, three-lobed, 1 mm long, 2 mm wide, with a shallow concavity near the middle, the anterior lobe ligulate, obtuse, 0.5 mm long, the lateral lobes triangular, narrowly obtuse, erect, surrounding the column below the middle, the base

connate to the base of the column; **column** arcuate, 2 mm long, the apex bidentate, the anther subapical, the stigma ventral.

**Antioquia:** Mun. Yarumal, Alto de Ventanas, alt. 2000 m, 20 May 1983, *R. Escobar & E. Valencia 2618* (Holotype: SEL), C. Luer illustr. 9099; Quebrada El Oro, alt. 1730 m, 21 May 1983, *R. Escobar & E. Valencia 2652* (SEL); Cocorná, epiphytic in cloud forest near Río Cocorná, alt. 1900-2000 m, 2 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10086* (MO); Yarumal, epiphytic in forest remnant along the road to Briceño, Quebrada El Oro, alt. 1850 m, 16 March 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14189, 14195, 14198, 14201* (MO).

*Lepanthes pterygion* has been collected on numerous occasions in Colombia. This small species, with the peduncle ranging in length from four millimeters to as long as the ovate leaf, produces a congested raceme of medium-sized flowers with a comparatively large, decurved column embraced near the base by a pair of tiny wings from the lip. The middle lobe of the lip is applied to the undersurface of the column. *Lepanthes yubarta* E. Calderón shares this unusual decurved column flanked at the base by the tiny lobes of the lip, but differs with a proportionally broader dorsal sepal; petals with shorter, obtuse lobes; and a lip with shorter, obtuse blades and a smaller, oblong, concave appendix.

**Lepanthes pyramidalis** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(6): 607, 1984.

Ety.: From the Latin *pyramidalis,* "pyramid-shaped," referring to the callus on the body of the lip.

**Plant** small, epiphytic, caespitose, roots filiform. Ramicauls slender, erect to suberect, 3-7.5 cm long, enclosed by 5-9 close lepanthiform sheaths with microscopically scabrous, long-acuminate ostia. **Leaf** spreading, coriaceous, suffused beneath with purple, ovate-acute, long-acuminate, 2-4 cm long, 1-2 cm wide, the rounded base contracted into a petiole 1 mm long. **Inflorescence** a very congested, successively flowered raceme up to 10 mm long, borne on top of the leaf by a filiform peduncle 12-24 mm long; floral bracts 0.6 mm long; pedicels 1.75-2 mm long; ovary 1.5 mm long; **sepals** bright rose, glabrous, ovate, acute, margins denticulate, the dorsal sepal 3 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals diverging, connate 1.5 mm, 3 mm long, 2.75 mm wide together, each 2-veined; **petals** orange-brown, pubescent, transversely oblong, 0.66 mm long, 3.2 mm wide, with a filiform midlobe 0.5 mm long on the outer margin near the middle, the upper lobe oblong, the truncate apex minutely erose, the lower lobe triangular, acute; **lip** red-orange, the blades glabrous, broadly elliptical with rounded ends, 1 mm long, the connectives from the middle of the blades, narrowly oblong, connate to the base of the column, the body transversely oblong with an erect, pyramidal callus in the center behind the anterior margin with an equally broad, oblong, concave, ciliate appendix with an oblong, pubescent apiculum; **column** 1 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Frontino, Alto de Cuevas, alt. 2050 m, 4 May 1983, *C. Luer, J. Luer, R. Escobar, A. Pridgeon & E. Valencia 8964* (Holotype: SEL); same collection, flowered in cultivation at Colomborquídeas, 3 Nov. 1983, *R. Escobar 3165* (JAUM); same collection, flowered in cultivation at Colomborquídeas, 18 Feb. 1984, *R. Escobar 3244 (*JAUM, MO); epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17658* (MO).

**Chocó:** epiphytic in cloud forest south of the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17683, 17684* (MO).

*Lepanthes pyramidalis* produces a red flower on top of the spreading, long-acuminate, ovate leaf, the raceme eventually reaching the apex of the leaf and frequently overhanging the edge. Often two flowering racemes of different lengths lie on top of a leaf. The blades of the lip are supported by slender connectives; the body is broad with a prominent, central, pyramidal callus; and the appendix is equally broad, concave, and ciliate. The similar *L. habenifera* is distinguished by flowers with glabrous petals and a lip with pubescent blades.

**Lepanthes quadricornis** Luer & R. Escobar, Orquideología 19(2): 108, 1994.

Ety.: From the Latin *quadricornis*, "four-horned," referring to the pair of forked petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls more or less horizontal, slender, 3 cm long, enclosed by 5 densely ciliate lepanthiform sheaths. **Leaf** spreading to pendent, coriaceous, marginate, broadly elliptical, obtuse, 20 mm long, 17 mm wide, contracted below into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively few-flowered raceme 2 mm long, borne on top of the leaf by a peduncle 14 mm long; floral bracts echinate, 1 mm long; pedicels 1 mm long; ovary 2 mm long, ciliate-carinate; **sepals** glabrous, margins densely ciliate, echinate-carinate externally, gaping, the dorsal sepal broadly to transversely ovate, the blade 10 mm long, 10 mm wide, 5-veined, the apex obtuse, shortly acuminate into a slender cauda 2.5 mm long, connate to the lateral sepals for 4 mm, the lateral sepals ovate-triangular, oblique, acute, acuminate, 11 mm long, 5 mm wide, 2-veined, connate 1 mm; **petals** glabrous, bilobed, forked from near the base, the lobes erect, oblong, subacute, carinate, each 3 mm long, 0.8 mm wide, the base of the outer lobe acute below the insertion into the base of the column; **lip** glabrous, bilobed-hippocrepiform, 1.75 mm long, the basal lobes obtuse, encircling the column, the apex rounded, shallowly incised, the base connate to the base of the column; **column** terete, 2.5 mm long, with the anther dorsal and the stigma subapical.

**Nariño:** apparently collected near Ricaurte, flowered in cultivation at the La Planada Science Station #48, 21 July 1989, *C. H. Dodson, R. Escobar & E. Valencia 18060* (Holotype: MO), C. Luer illustr. 16218; Ricaurte, trail from La Planada to Pielapi, wet lower montane cloud forest, alt. 1600-1800 m, 22 July 1988, *A. Gentry et al. 63602* (MO).

This species of *Lepanthes* subgen. *Marsipanthes* is distinguished by the proportionally large flower borne on top of a spreading, broadly elliptical leaf. The densely ciliate sepals form a broad, shallow cup, the dorsal sepal with a short tail, the laterals acute. The erect lobes of the forked petals are oblong and sharply carinate. The glabrous lip forms a "U," with the basal lobes encircling the column. The plant and flowers of *L. carunculigera* are similar, but the latter is distinguished by petals forked above the middle.

**Lepanthes quandi** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(9): 924, 1984.

Ety.: From the Arabic *qandi*, "cane sugar candy," in allusion to the fancied appearance of the flowers.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-7 cm long, enclosed by 6-12 close, microscopically ciliate to scabrous lepanthiform sheaths. **Leaf** erect to suberect, coriaceous, suffused with purple beneath, ovate to elliptical, 2.5-4.5 cm long, 1.2-2 cm wide, the apex more or less obtuse, acuminate or abruptly contracted into a linear apical segment, tridentate, the rounded base contracted into a petiole 2-3 mm long. **Inflorescence** a congested, successively flowered raceme up to 6 mm long, borne on top of the leaf by a filiform peduncle 3-10 mm long; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** light orange, glabrous, margins minutely denticulate, the dorsal sepal ovate-triangular, subacute, 4.25 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, acute, shortly acuminate, diverging, 4 mm long, 1.9 mm wide, 2-veined, connate 1 mm; **petals** glabrous, orange suffused with red, trilobed, 1 mm long, 4 mm wide, the middle lobe setiform from the outer margin near the middle, the upper lobe oblong, truncate, the lower lobe oblong, oblique, acute; **lip** orange, suffused with red, the blades oblong, thin, membranous, microscopically cellular-pubescent, adherent medially over the column, 2 mm long, the ends rounded,· the connectives cuneate with a narrow body connate to the base of the column, the appendix pubescent, oblong, with a glandular apex bilobed in the lateral view; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Yarumal, epiphytic in cloud forest, Ratón Pelado, alt. 2650 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10059* (Holotype: MO), *10057, 10060* (MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 26 May 1984, *R. Escobar 3248A, B, C & D* (JAUM); same locality, 22 May 1983, *R. Escobar & E. Valencia 2664* (SEL), C. Luer illustr. 9109; same collection, flowered in cultivation at Colomborquídeas, 5 Dec. 1983, *R. Escobar 3181* (COL); Yarumal, epiphytic in forest remnant along the road to Briceño, Quebrada El Oro, alt. 1850 m, 16 March 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14194* (MO); near the pass between Urrao and Carmen de Atrato, 23 May 1995, *C. Luer 17532* (MO).

**Putumayo:** San Francisco, Río Blanco, alt. 2200 m, collected by R. Escobar, E. Valencia & H. Volles, June 1987, flowered in cultivation at Colomborquídeas, 21 Dec. 1992, *R. Escobar 5053* (MO).

This colorful species is similar to *Lepanthes habenifera*, but the leaves of *L. quandi* are proportionally wider, abruptly acuminate and deep purple beneath. Compared to *L. habenifera*, all three sepals rather than just the lateral sepals are denticulate, and the lip with a considerably smaller appendix is connate to the column above the base rather than connate to the base.

**Lepanthes ramosii** Luer, Orquideología 22(1): 45-47, 2001.

Ety.: Named in honor of J. E. Ramos of the Universidad del Valle del Cauca, Cali, Colombia, co-collector of this species.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-12 mm long, enclosed by 4-5 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-ovate, subacute to obtuse, mucronate, 8-9 mm long, 5-6 mm wide, the base cuneate into a petiole ca. 1 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 10 mm long, borne beyond the leaf by a slender peduncle 8-10 mm long; floral bracts spiculate, 0.8-1 mm long; pedicels 2-2.5 mm long; ovary 0.5 mm long; **sepals** yellow, purple toward the base, glabrous, margins smooth, the dorsal sepal ovate, acute, concave, 3 mm long, 1.3 mm wide, 3-veined, free from the lateral sepals, the lateral sepals ovate, oblique, diverging, acute, concave, 2.6 mm long, 1 mm wide, 2-veined, barely connate at the base; **petals** forked above the base into 2 filamentous lobes diverging 180°, shortly ciliate, the upper lobe 2.5 mm long, the lower lobe 1.5 mm long; **lip** purple, bilaminate, the blades oblong, with subacute ends, 1.25 mm long, held above the column, the connectives broad, below the middle of the blade, the body broad, connate to the column above the middle, the sinus filled with a thick, protuberant, triangular appendix with a minute cavity beneath the subacute apex; **column** erect, cylindrical-clavate, 1.5 mm long, the anther apical, the stigma ventral.

**Chocó:** Mun. San José del Palmar, Cerro Torrá, along Río Negro, alt. 1800 m, 12 Aug. 1988, *J. E. Ramos & P. Silverstone-Sopkin 1176* (Holotype: CUCV; Isotype: MO), C. Luer illustr. 18457; cloud forest above heliport, alt. 1920-1950 m, 8 Aug. 1988, *P. Silverstone-Sopkin, J. E. Ramos, L. H. Ramos, N. Paz, R. T. González & A. Henao 4153* (CUVC).

This tiny species is apparently endemic on Cerro Torrá in the Western Cordillera of Colombia. It is characterized by a dense, distichous raceme borne beyond the elliptical leaf by a long peduncle; ovate sepals; and petals divided into two filamentous processes. The bilaminate lip with a broad body is connate to an erect, cylindrical column above the middle. The appendix is thick and triangular with a small, sharply defined cavity beneath the apex. The flowers of *Lepanthes renzii* Luer share similar narrowly long-triangular petals and a lip with narrowly ovate blades connate to an elongated column near the middle, but *L. renzii* is larger both vegetatively and florally, with flowers with single-veined lateral sepals.

**Lepanthes reburra** Luer & Thoerle, Harvard Pap. Bot. 16(2): 333, 2011.

Ety.: From the Latin *reburrus*, "one with bristling hair," referring to the coarse pubescence of the lepanthiform sheaths.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-11.5 cm long, enclosed by 7-8 coarsely pubescent lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple, elliptical-ovate, acute, acuminate, 4-7 cm long, 1.5-2.8 cm wide, the base rounded, contracted into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 22 mm long, borne behind the leaf by a slender peduncle to 20 mm long; floral bracts 1 mm long; pedicels 0.75 mm long; ovary 1.5 mm long; **sepals** greenish white, glabrous, carinate, the dorsal sepal broadly ovate, the apex obtuse with the tip acuminate, reflexed, margins microscopically ciliate, 4 mm long, 2.6 mm wide, 3-veined, connate to the lateral sepals for less than 1 mm, the lateral sepals ovate, oblique, with the acuminate apices diverging, margins denticulate, 4.5 mm long, 2 mm wide, 1-veined, connate less than 1 mm; **petals** white, minutely pubescent, transversely bilobed, 1 mm long, 2 mm

wide, the lobes oblong-triangular, obtuse, the upper lobe slightly larger than the lower lobe; **lip** rose, bilaminate, pubescent, the blades elliptical-oblong, obtuse at the ends, 1.5 mm long, the connectives cuneate from below the middle of the blade, the body broad, connate to the column at the base, the sinus acute with the appendix short, thick, pubescent; **column** stout, 1.5 mm long, the anther apical, the stigma ventral.

**Norte de Santander:** Páramo de Mefué, alt. 2600 m, 12 May 1982, *C. Luer, J. Luer, R. Escobar & E. Valencia 7801* (Holotype: SEL).

This species from the Eastern Cordillera is known from a single collection. Florally, it is similar to *Lepanthes lasiopetala* with the recurved, acuminate tip of the dorsal sepal and diverging lateral sepals, but the lateral sepals are denticulate rather than smooth-margined. Instead of long-ciliate, the petals are minutely pubescent. The blades of the lip, the appendix, the column and ovary are similar. The most notable differences are vegetative: *L. reburra* is a much larger plant, with ramicauls generally longer than five centimeters rather than shorter; the sheaths of the ramicauls are coarsely pubescent rather than minutely ciliate; and the leaf is elliptical-ovate with an acuminate apex, rather than elliptical-lanceolate.

**Lepanthes refracta** Luer, Orquideología 22(1): 48-50, 2001.

Ety.: From the Latin *refractus*, "bent abruptly backward," referring to the reflexed sepals and petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4-7 cm long, enclosed by 4-12 microscopically scabrous, acuminate lepanthiform sheaths. **Leaf** erect, coriaceous, reticulated, subcircular, obtuse, shortly acuminate, 30 mm long, 24 mm wide, the rounded base abruptly contracted into a petiole 2 mm long. **Inflorescence** a distichous, very congested, successively many-flowered raceme, up to 6 mm long borne behind the leaf by a slender peduncle 11 mm long; floral bracts 1.5 mm long; pedicels 1.75 mm long; ovary 1.5 mm long; **sepals** acutely reflexed, yellow, glabrous, margins smooth, the dorsal sepal ovate, obtuse, 2 mm long, 1 mm wide, 3-veined at the base, free from the lateral sepals, the lateral sepals free, oblong, oblique, diverging, obtuse, 1.8 mm long, 0.9 mm wide, 2-veined; **petals** red, glabrous, transversely bilobed, 0.5 mm long, 1.5 mm wide, the upper lobe triangular, oblique, 1 mm long, the lower lobe triangular, obtuse; **lip** red, glabrous, transversely bilobed, with the lobes embracing the column, 1 mm wide expanded, with the apex retuse, the lobes rounded at the apex, the base triangular, obtuse, connate to the base of the column by a short, slender strap; **column** terete, microscopically cellular, 1 mm long, the anther and stigma apical.

**Valle del Cauca:** without collection data, cultivated by Orquídeas del Valle, Oct. 2000, *A. Niessen 071A* (Holotype: MO), C. Luer illustr. 19443.

**Nariño:** collected by J. L. Aguirre, data unknown, flowered in cultivation at J & L Orchids, Easton, Connecticut, 9 May 2001, *J & L s.n.* (MO), C. Luer illustr. 19916.

This small to medium-sized species is distinguished by nearly circular, usually reticulated leaves with a linear acumen; and a shorter, successively flowered, densely distichous inflorescence of very small flowers. The sepals are glabrous with smooth margins and, with the petals, reflex acutely backward around the column. The lip is smaller than the column, which it clasps with rounded lobes. There are several other Colombian species that share the characteristic reflexed sepals, e.g., *Lepanthes pleurorachis*, *L. georgii*, but none have similar leaves.

**Lepanthes renzii** Luer, Selbyana, 30(1): 13, 2009.

Ety.: Named in honor of Dr. Otto Renz of Basel, Switzerland, who collected this species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-7 cm long, enclosed by 3-5 pubescent and ciliate lepanthiform sheaths with dilated ostia. **Leaf** erect, coriaceous, elliptical to elliptical ovate, acute, 2.5-3.5 cm long, 0.5-0.9 cm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** 1-3 densely and successively many-flowered racemes to 3.5 cm long, flowering from the

base; floral bracts 1 mm long, muricate; pedicels 1 mm long; ovary 1 mm long; **sepals** color unknown, glabrous, membranous, margins sparsely microscopically denticulate, the dorsal sepal narrowly ovate, acute, 4 mm long, 1.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals narrowly ovate, oblique, diverging, acute, 4 mm long, 1.5 mm wide, 1-veined; **petals** glabrous, transversely bilobed, 0.3 mm long, 4 mm wide, the lobes about equal, narrowly linear-triangular, acute, 2 mm long, 0.3 mm wide; **lip** bilaminate, the blades narrowly ovate on either side of the column with rounded ends, glabrous, 1.3 mm long, the connectives broad, forming a broad body, connate to the column near the middle, the sinus acute, with a minute, external, filamentous, recurved appendix; **column** stout, 1.3 mm long, decurved, the anther and stigma apical.

**Cundinamarca:** without locality, alt. 3400 m, 24 Aug. 1941, *O. Renz 3527* (Holotype: BAS; Isotype: MO), C. Luer illustr. 21367.

This small species was collected by Jany Renz at a high altitude in the Eastern Cordillera of Colombia. It is distinguished by densely, successively multiflowered racemes about as long as the leaf. The sepals are acute, with the laterals single-veined. The lobes of the petals are filamentous, about equal in length, and about as long as a sepal. The blades of the lip flank a decurving column, forming a broad body beneath, connate to the column near the middle, with a closed or very acute sinus and an external, recurved, capillary appendix. The smaller *Lepanthes ramosii* shares the narrowly long-triangular petals and lip with narrowly ovate blades connate to the column above the middle, but the peduncle is longer than the leaf, bearing a distichous raceme with flowers with two-veined lateral sepals.

**Lepanthes repens** Luer, Phytologia 54(5): 368, 1983.

Ety.: From the Latin *repens,* "creeping," referring to the repent rhizome.

**Plant** large, epiphytic to terrestrial, repent, the rhizome 1-3 cm long between ramicauls; roots coarse. Ramicauls stout, ascending to erect, 15-33 cm tall, enclosed by 10-13 microscopically scabrous lepanthiform sheaths. **Leaf** erect, thinly coriaceous, ovate-elliptical, acute, acuminate, 8-11.5 cm long, 2-3.3 cm wide, the base broadly cuneate into a petiole 5-9 mm long. **Inflorescence** a congested, distichous raceme up to 40 mm long, borne by a filiform peduncle 15-40 mm long, 1-3 racemes behind the leaf; floral bracts 2.5 mm long; pedicels 3 mm long; ovary 3 mm long; **sepals** light yellow, glabrous, ovate, acute, attenuate, margins smooth, the dorsal sepal 10 mm long, 6 mm wide, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals oblique, diverging, 9.5 mm long, connate for 3 mm, 7.5 mm wide together, each 2-veined; **petals** yellow, edged in purple, transversely oblong, 1.9 mm long, 3.75 mm wide, the upper lobes triangular, obtuse, the outer margin rounded, the lower lobe smaller, acute; **lip** orange, edged in purple, the blades trapeziform, 2.8 mm long, in apposition over the column, the ends obliquely truncate, the apex weakly ciliate, the connectives short, cuneate, connate to the base of the column, the appendix minute, pedunculate in the sinus; **column** 2 mm long, the anther apical, the stigma ventral.

**Nariño:** epiphytic in cloud forest around the crater lake of Volcán Galeras, alt. 3200 m, 21 Jan. 1979, *C. Luer & J. Luer 3748* (SEL).

Ecuador (Carchi, Holotype, *Luer et al. 6261*: SEL; Imbabura; Loja).

This robust species occurs at high altitudes where it grows either epiphytically or terrestrially. Plants eventually form dense fascicles of ramicauls that may exceed 30 centimeters in length, rising from ascending, long-creeping rhizomes. The congested, distichous racemes are shorter than the shortly acuminate, elliptical leaves; the sepals are broadly ovate and shortly acuminate; the petals are transverse and broadly oblong. The trapezoid blades of the lip have long-ciliate apices and close like doors over the column. The connectives are short with a minute, pedunculated gland in the sinus. *Lepanthes repens* is the only large, repent species known from Colombia.

**Lepanthes reticulata** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(6): 608, 1984.

Ety.: From the Latin *reticulatus,* "reticulate," referring to the purple network-like pattern of veins on the leaves.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls very slender, suberect, 2-6 cm long, enclosed by 6-9 close lepanthiform sheaths, glabrous except for the microscopically ciliate ostia. **Leaf** suberect, thinly coriaceous, intensely reticulated in purple, narrowly ovate, 3-4 cm long, 0.8-1.2 cm wide, the apex acute, acuminate, tridenticulate, the base cuneate into a 1 mm long petiole. **Inflorescence** a congested, distichous, successively flowered raceme up to 11 mm long, borne on top of the leaf by a filiform peduncle up to 8 mm long; floral bracts 0.5 mm long; pedicels 2.5 mm long; ovary 2 mm long; **sepals** orange-brown, glabrous, broadly ovate, obtuse, abruptly and shortly acuminate, margins minutely denticulate, the dorsal sepal 3.75 mm long, 3.2 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, connate 2 mm, 3.33 mm long, 4.2 mm wide together, each 2-veined; **petals** red-orange, microscopically pubescent, transversely bilobed, 1 mm long, 3.5 mm wide, the upper lobe oblong with the end rounded, the lower lobe much smaller, narrowly triangular, acute; **lip** orange-brown, pubescent, the blades oblong, 0.85 mm long, the ends obtuse, the apices ciliate, the connectives cuneate, connate to the column at the base, the appendix pubescent, ligulate, concave, hinged at the sinus; **column** 0.75 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Yarumal, Quebrada El Oro, alt. 1730 m, 21 May 1983, *R. Escobar & E. Valencia 2650* (Holotype: SEL), C. Luer illustr. 9105; same area, alt. 1820 m, 14 Feb. 1984, *R. Escobar & E. Valencia 3226* (COL, JAUM, MO); epiphytic in cloud forest along Río El Oro, north of Yarumal, alt. 2700 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10077* (MO); epiphytic in forest remnant along the road to Briceño, Quebrada El Oro, alt. 1850 m, 19 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14197* (MO).

*Lepanthes reticulata* is distinguished by the narrowly ovate, reticulated leaves with acuminate, prominently three-toothed apices. The sepals are broadly ovate and obtuse; the upper lobe of the petals is much larger than the lower lobe; and the lip is very small and pubescent with a pubescent, tongue-like appendix. The flowers, with broadly ovate sepals and petals with large, obovate upper lobes like rabbits' ears, are reminiscent of *L. cunicularis*. *Lepanthes cunicularis* is larger vegetatively and florally, with ramicauls to 15 centimeters long, broadly elliptical leaves to six centimeters long, and flowers with sepals about five millimeters long.

**Lepanthes rhombipetala** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 98, tab. 33, n. 127, 1920.

Ety.: From the Latin *rhombipetalus*, "with rhomboid petals," referring to the petals.

**Plant** large, epiphytic to terrestrial, caespitose; roots coarse. Ramicauls erect, stout, 10-18 cm long, enclosed by 8-14 microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, acuminate, 7-13 cm long, 2.5-5.5 cm wide, the base cuneate or rounded, contracted into a petiole 3-5 mm long. **Inflorescence** a progressively lengthening, loose, distichous raceme up to 15 cm long including the peduncle 6-10 cm long, 2-3 flowers open simultaneously; floral bracts 2-2.5 mm long; pedicels 2 mm long; ovary 1.5 mm long, with crested ribs; **sepals** purple, glabrous, carinate, margins microscopically ciliate-denticulate, the dorsal sepal ovate-triangular, acute, acuminate, concave, 8-9.5 mm long, 4.5-5 mm wide, 3-veined, connate 1 mm to the lateral sepals, the lateral sepals narrowly triangular, oblique, acute, acuminate, 5-8.5 mm long, connate 4-8 mm into a shortly bifid, triangular synsepal, 4-5 mm wide with nearly approximate tips, each 2-veined; **petals** rose to dark red, minutely pubescent, transversely bilobed, 1-1.25 mm long, 2-2.2 mm wide, the lobes subequal, broadly oblong, broadly obtuse; **lip** dark red or purple, bilaminate, the blades oblong with rounded ends, 2.4 mm long, microscopically pubescent, the connectives short, cuneate, the body connate to the base of the column, the sinus obtuse, with the appendix minute, delicate, pedunculated, biglandular; **column** stout, 1.5 mm long, the anther dorsal, the stigma ventral.

**Cauca:** without locality, alt. 2000 m, collected by *M. Madero s.n.* (Holotype destroyed at B, Lectotype designated here: tab. 33, n. 127 in Schlechter, 1920).

**Nariño:** between La Cocha and Sibundoy, collected by E. Valencia, July 1989, flowered in cultivation at Colomborquídeas, 5-9 May 1993, *C. Luer 16710* (MO).

**Antioquia:** Jardín, Alto de Ventanas, alt. 2800 m, 25 May 1983, *R. Escobar, L. Posada, J. Posada, et al. 2690* (MO), C. Luer illustr. 9114; Jardín, La Cifuentes, alt. 2350 m, collected by R. Escobar et al., July 1986, flowered in cultivation at Colomborquídeas, 3 Jan. 1993, *R. Escobar 5219* (MO).

Also Ecuador (Carchi, Napo).

*Lepanthes rhombipetala*, recognized by Schlechter as distinct from *L. nanegalensis* Rchb. f., has been treated as a synonym of the latter (Luer 1996b), but the two are sufficiently distinct to recognize both. This robust species occurs in southern Colombia and northern Ecuador, while *L. nanegalensis* is not known outside of Ecuador. *Lepanthes rhombipetala* is characterized by the large size; ovate, acuminate leaves; and a gradually lengthening, long-lasting, loosely flowered inflorescence that eventually far exceeds the leaf. The sepals of the dark-colored flowers are acute and acuminate, the lateral sepals being deeply connate into a narrowly triangular, shortly bifid synsepal. The petals are small and rhomboid, with the opposite lobes short and obtuse. The blades of the lip are narrowly ovate; the connectives are short and cuneate; and the minute appendix is delicate and pedunculate with a biglandular terminal segment. The flowers of *Lepanthes deliciasensis* are also shaped like an elongated diamond, with the dorsal sepal and synsepal nearly identical, but the latter is distinguished by its concave dorsal sepal, and petals with the apex of the upper lobe narrowed and everted.

**Lepanthes rhynchion** Luer, Phytologia 54(5): 368, 1983.

Ety.: From the Greek *rhynchion*, "a little snout," referring to the protruding stigma.

**Plant** medium to large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 6-37 cm long, enclosed by 7-15 glabrous to microscopically ciliate lepanthiform sheaths with oblique, non-dilated ostia. **Leaf** erect, coriaceous, more or less suffused with purple beneath, elliptical-ovate, acuminate, acute, 3-11 cm long, 1.5-3.5 cm wide, the base cuneate into a petiole 3-5 mm long. **Inflorescence** a subdense, distichous, successively flowered raceme, up to 3 cm long, borne by a filiform peduncle up to 3 cm long, in a fascicle of up to 10 along the back of the leaf, occasionally 2 flowers open simultaneously; floral bracts 1.5-2 mm long, more or less spiculate; pedicels 1-2 mm long; ovary 1.5-2 mm long, more or less spiculate; **sepals** yellow, sometimes suffused with rose, glabrous, carinate-laciniate, ovate, acute, shortly acuminate, margins denticulate, the dorsal sepal 4.5-5.75 mm long, 2.25-3.6 mm wide, 3-veined, connate 0.5-1 mm to the lateral sepals, the lateral sepals oblique, diverging, 4-4.5 mm long, 2-2.5 mm wide, 1-veined, connate 1 mm; **petals** yellow, sometimes edged in purple, transversely bilobed, 1-1.25 mm long, 2.5-3 mm wide, the upper lobe broadly oblong, the apex rounded, the lower lobe smaller, narrowly oblong with the apex rounded; **lip** orange to red, bilaminate, the blades narrowly elliptical, 2 mm long, glabrous, the apices acute, the bases narrowly obtuse to round, the connectives broadly cuneate, the body broad, connate to the column above the base, the appendix a minute, pubescent lobule; **column** 2 mm long, the anther dorsal, the stigma protuberant, apical, narrowly transverse.

**Antioquia:** epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17654* (MO).

**Chocó:** Carmen de Atrato, road to Guaduas, alt. 2000 m, November 1990, collected by E. Valencia, R. Escobar 5309, flowered in cultivation at Colomborquídeas, 5-9 May 1993, *C. Luer 16718* (MO).

**Quindio:** La Linea, alt. 3200 m, collected 17 May 1989, W. & H. Königer & E. Valencia K-195B, flowered in cultivation, *R. Escobar 4014* (MO).

**Nariño:** between Pasto and La Coche, alt. 3000 m, 21 Jan. 1979, *C. Luer & J. Luer 3766* (SEL); epiphytic in forest near the pass between Pasto and La Cocha, alt. 3150 m, 27 Jan. 1987, *C. Luer, J. Luer & C. H. Dodson 12553* (MO); Ricaurte, collected by E. Valencia, 1991, flowered in cultivation at Colomborquídeas, 21 Dec. 1992, *R. Escobar 5054* (MO).

**Putumayo:** epiphytic in cloud forest between La Cocha and Sibundoy, alt. 2700 m, 30 July 1978, *C. Luer, J. Luer, R. Escobar, et al. 3158* (SEL).

Also Ecuador (Pichincha, Holotype, *Luer et al. 3333*: SEL; Carchi; Sucumbíos; Imbabura; Napo; Tungurahua; Zamora-Chinchipe).

This species is widely distributed in the Andes of Colombia, Ecuador and Peru. It is one of the most beautiful in the genus, with colorful flowers borne in a short but subdensely flowered raceme contrasting against the purple underside of the leaves. The widely spread, denticulate lateral sepals are one-veined; the upper lobes of the petals are large, more or less overlapping; and the blades of the lip are glabrous and narrow with acute apices flanking the snout-like stigma.

*Lepanthes rhynchion* is most similar to *L. speciosa* Luer & Hirtz of northern Ecuador. *Lepanthes speciosa* differs in its broadly ovate sepals, petals with the upper lobe concave, and a lip with a protruding appendix.

## **Lepanthes ribes** Luer, Selbyana, 3(1-2): 14, 1976.

Ety.: Named for the fancied resemblance of the flower to a gooseberry of the genus *Ribes* L.

**Plant** small to medium, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2.5-6 cm long, enclosed by 6-9 microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 20-33 mm long, 8-15 mm wide, cuneate below into a petiole 2-3 mm long. **Inflorescence** a subdense, successively several-flowered raceme up to 25 mm long with the flower pendent, borne beyond the leaf by a slender, arching peduncle 20-35 mm long; floral bracts 1.5-2 mm long; pedicels 3-3.5 mm long; ovary papillose-crested, 5-6 mm long; **sepals** heavily mottled with red-purple, minutely ciliate-carinate, the dorsal sepal ovate, concave, obtuse and apiculate at the apex, 13-15 mm long, 10 mm wide unexpanded, 5-veined, connate 6 mm to the lateral sepals to form an inflated, ovoid, saccate tube, the lateral sepals ovate oblique, 10-12 mm long, 5-6 mm wide, 2-veined, connate 3 mm, with the apices triangular, acute, reflexed; **petals** green, fleshy, semiterete or triquetrous above the middle, narrowly linear-oblong, erect, narrowly obtuse, glabrous, 6-7 mm long, 0.75 mm wide; **lip** light green, glabrous, bilobed-horse shoe-shaped, with the apices rounded, surrounding the column, the lobes 1.3-1.5 mm long, the apex round, notched, with a minute apiculum in the sinus, the base connate to the base of the column; **column** 1.5 mm long, the anther dorsal with an elongate rostellum, the stigma ventral.

**Valle del Cauca:** Serrania de Carras Pattas, alt. 1800 m, collected by J. Aguirre, June 1996, flowered in cultivation at Colomborquídeas, *R. Escobar 8075* (JAUM).

Also from Ecuador (Pichincha, Holotype, *C. Luer & R. Kent 233*: SEL).

*Lepanthes ribes* is uncommon in southern Colombia and northern Ecuador. Although vegetatively similar to many other species of the subgenus *Marsipanthes*, the large, pendent, saccate, purple-mottled flower is easily recognized. The concave dorsal sepal is connate nearly half its length to the lateral sepals, forming a gaping sepaline cup. The apices of the lateral sepals reflex below the aperture. The long, green petals from deep within the cup reach to the opening. The lip is small, horseshoe-shaped, and surrounds the column.

## **Lepanthes ricaurtensis** Luer & R. Escobar, Orquideología 19(2): 111, 1994.

Ety.: Named for the town of Ricaurte in the department of Nariño where this species occurs.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls suberect, slender, 1.5-5 cm long, enclosed by 5-9 microscopically ciliate lepanthiform sheaths. **Leaf** suberect, coriaceous, narrowly ovate, 2.5-4.5 cm long including a petiole 1 mm long, the blade 7-9 mm wide, the apex acute, acuminate, conspicuously tridentate, cuneate below into the petiole. **Inflorescence** racemose, a congested, distichous, successively several-flowered raceme, up to 5 mm long, borne on top of the leaf by a slender peduncle 15 mm long; floral bracts oblique, muricate, 1 mm long; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** yellow-green, glabrous, margins smooth, the dorsal sepal broadly ovate, obtuse, 2.3 mm long, 2.3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals broadly ovate, oblique, connate into a transversely ovate, bifid synsepal with the apices obtuse, 2.3 mm long, 2.8 mm wide, each 2-veined; **petals** yellow-green, suffused with rose, transversely bilobed, 0.8 mm long, 2.1 mm wide, the upper lobe oblong, truncate with the margin minutely irregular, the lower lobe

triangular, acute; **lip** green, bilaminate, the blades glabrous (at most cellular), oblong with rounded ends, 1 mm long, the connectives cuneate, the body broad, thick, concave, connate to the base of the column, the sinus broad, the appendix triangular, protruding from below the margin; **column** 0.8 mm long, the anther apical, the stigma ventral.

**Nariño:** epiphytic in forest near Ricaurte, alt. 1600 m, 3 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4622* (Holotype: SEL).

This weak little species is superficially similar to the common *Lepanthes mucronata*. Tiny flowers with green, irregularly truncate petals are borne on the upper surface of narrowly ovate leaves. The lips of the two species, however, are profoundly different. Instead of a large, oblong, concave appendix beneath thin, membranous blades of the lip, the appendix of *L. ricaurtensis* is short and triangular, and the blades of the lip are comparatively thick.

**Lepanthes rodrigoi** Luer, Orquideología 20(2): 198-201, 1996.

Ety.: Named in honor of Rodrigo Escobar, co-collector of this species.

**Plant** medium to large in size, epiphytic, caespitose; roots slender. Ramicauls very slender, erect, strict, elongated, 5-23 cm long, enclosed by 9-15 microscopically scabrous, tightly fitting lepanthiform sheaths with acuminate apices. **Leaf** erect, thinly coriaceous, narrowly ovate, acute, long-acuminate, 3-7 cm long, 0.9-1.6 cm wide, the base broadly cuneate, contracted into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 10 mm long, borne on top of the leaf by a filiform peduncle 15-35 mm long; floral bracts spiculate, 1.5 mm long; pedicels 2 mm long; ovary 3-3.5 mm long; **sepals** orange-brown, suffused with purple medially, membranous, glabrous, spiculate-carinate, widely spread, margins microscopically ciliate, the dorsal sepal broadly ovate, obtuse, minutely short-acuminate, 6-10 mm long, 7-9 mm wide, 3-veined, connate to the lateral sepals for 3.5 mm, the lateral sepals broadly ovate, oblique, obtuse, 6-10 mm long, connate 4-5 mm into a bifid synsepal 7-9 mm wide, each 2-veined; **petals** brown, finely microscopically pubescent, transversely bilobed, 1-1.5 mm long, 4-4.5 mm wide, the lobes triangular, the upper lobe slightly larger; **lip** brown, bilaminate, the blades microscopically pubescent, ovate, 2 mm long, with rounded ends, the apex long-ciliate, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse, filled with a broadly ovate, membranous appendix, with thickened, ciliate margins that are approximate at the tip; **column** 1.5 mm long, the anther dorsal and the stigma ventral.

**Antioquia:** Urrao, alt. 2700 m, 12 Dec. 1994, *R. Escobar, F. López & W. Teague s.n.* (Holotype: JAUM); epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17663* (MO).

*Lepanthes rodrigoi* is known only from one mountain pass in the Western Cordillera of Colombia. It is characterized by long, straight, very slender ramicauls bearing a narrowly ovate leaf with a long-acuminate apex. The narrow apical portion is about 40 percent of the length of the thin leaf. The congested raceme is borne on top of the leaf by a long, filiform peduncle. The flower is brown and comparatively large. The sepals are broadly ovate with the obtuse apices very shortly acuminate. The lobes of the proportionally small, transverse petals are triangular, with the upper lobe slightly larger than the lower. The blades of the lip are ovate with long-ciliate apices. The appendix is broad and membranous, with thickened, pubescent margins that are approximate at the apex.

The large plant and flat, fully expanded flower are similar to those of *Lepanthes macrantha*. The ramicauls of *L. macrantha* are tightly fitted with less widely dilated lepanthiform sheaths; the leaf is nearly twice as broad, with a proportionally shorter, though still long, narrow acumen. The flowers of *L. macrantha* differ, with petals with a truncate upper lobe and a setiform process between the lobes, and a lip with semilunate, medially adherent blades.

## **Lepanthes roezliana** Luer & R. Escobar, Orquideología 17(3): 216, 1988.

Ety.: Named in honor of the orchid collector Benedict Roezl who visited the area of the silver mines where this species was discovered.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-5.5 cm long, enclosed by 3-6 narrow, minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, often suffused with purple beneath, elliptical, obtuse to subacute, 15-30 mm long, 10-17 mm wide, the base cuneate into a 3 mm long petiole. **Inflorescence** a congested, distichous, successively flowered raceme 6-7 mm long, borne either on top of or beneath the leaf by a filiform peduncle 8-9 mm long; floral bracts 1.25 mm long, scabrous; pedicels 2 mm long; ovary 1.5 mm long; **sepals** light yellow, glabrous, ovate, acute, carinate, margins smooth, the dorsal sepal 3.5 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 3 mm long, connate 1.25 mm, 2.75 mm wide together, each 2-veined; **petals** light yellow, cellular-pubescent, transversely bilobed, 0.6 mm long, 3.75 mm wide, the lobes subequal, narrowly oblong, obtuse; **lip** red, bilaminate, the blades glandular-pubescent, thick, ovate, 1 mm long, the apex narrowly obtuse, the base broadly truncate, the connectives cuneate, connate to the base of the column, the appendix minute, on the external surface of the body below the sinus; **column** proportionally large, 1.25 mm long, the anther and stigma apical.

**Antioquia:** epiphytic in cloud forest near El Plateado above Frontino, alt. 2200 m, 12 May 1983, *C. Luer, J. Luer, R. Escobar, A. Pridgeon & E. Valencia 9093* (Holotype: SEL).

*Lepanthes roezliana* was discovered in the forest near the old silver mine above Frontino, an area known to many of the nineteenth-century plant collectors. Trails leading to mining areas were among the few available to reach distant areas. Benedict Roezl discovered *Masdevallia saltatrix* Rchb. f. at this locality.

This small species is characterized by smooth-margined sepals; narrowly oblong petals wider than the length of a sepal; and a lip with thick, pubescent blades, parted to reveal the large, protruding, cylindrical column. Superficially, the somewhat larger *Lepanthes valenciae* Luer & R. Escobar is similar both vegetatively and florally, but is distinguished by the lip with flat, glabrous, narrowly elliptical blades that meet over the column and conceal most of its length.

## **Lepanthes rutrum** Luer & R. Escobar, Orquideología 19(2): 112, 1994.

Ety.: From the Latin *rutrum*, "a spade," referring to the appearance of the leaf.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 7-12 cm long, enclosed by 9-11 closely appressed, microscopically ciliate lepanthiform sheaths. **Leaf** suberect, coriaceous, transversely cordate, obtuse, slightly acuminate, 3-4 cm long, 3-4 cm wide, the bilobed base abruptly contracted into a petiole 1-2 mm long. **Inflorescence** a dense, distichous, successively many-flowered raceme up to 5 mm long, borne on top of the leaf by a slender peduncle 8-15 mm long; floral bracts pubescent, 1-1.5 mm long; pedicels 2-2.5 mm long; ovary 1 mm long; **sepals** yellow, carinate, glabrous, margins smooth, the dorsal sepal ovate, subacute, 3.75 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.25 mm to form a flat flower, the lateral sepals ovate, obtuse, oblique, diverging, 3.5 mm long, 2 mm wide, 2-veined, connate 1 mm; **petals** orange with red margins, microscopically pubescent, transversely bilobed, 1 mm long, 4.75 mm wide, 3-veined, the lobes triangular-subfalcate, with the acute apices incurved, the upper lobe larger than the lower lobe; **lip** bilaminate, with the blades deep purple, pink toward the apices, microscopically ciliate, narrowly oblong, 2 mm long, the apices acute, the connectives broadly cuneate, the body broad, thick, connate to the base of the column, the sinus broad with the appendix external, oblong, thick, oblong, arcuate, retuse, short-pubescent, with a tuft of long hairs beneath; **column** 2 mm long, the anther and the stigma apical.

**Valle del Cauca:** old road to Buenaventura, El Queremal, alt. 1350 m, 12 May 1989, *R. Escobar, W. & H. Königer & E. Valencia 4005* (Holotype: MO; Isotype: JAUM), C. Luer illustr. 14921.

Vegetatively, this species is distinct. The slender ramicauls, clad in tightly fitting sheaths, bear a relatively large, transversely cordate leaf with an obtuse, slightly acuminate apex. The base of the leaf is deeply bilobed. The leaf is more or

less spreading, with the short, congested raceme on top. The small flowers are disappointingly similar to many others that are borne in short, crowded, distichous racemes. The sepals are obtuse; the petals are comparatively large with triangular lobes; and the blades of the lip are oblong. Beneath the short, thick appendix, located on the external surface of the body, there is a tuft of long hairs. The flowers of *Lepanthes hirpex* and *L. larvina* are very similar, but the leaves of the former are ovate and the leaves of the latter are elliptical.

**Lepanthes saccata** Luer & R. Escobar, Orquideología 17(3): 220-223, 1988.

Ety.: From the Latin *saccatus*, "pouched," referring to the deeply concave appendix.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls very slender, suberect, 3-10 cm long, enclosed by 5-10 thin, minutely scabrous lepanthiform sheaths with long-acuminate apices. **Leaf** spreading, thinly coriaceous, elliptical, slightly conduplicate, acute, long-acuminate, 3-5 cm long, 1-1.5 cm wide, the base cuneate into the petiole 1 mm long. **Inflorescence** a congested, successively flowered raceme up to 5 mm long, borne on top of the leaf by a filiform peduncle either ca. 3 mm long, or ca. 10 mm long; floral bracts 1 mm long; pedicels 2.5 mm long; ovary 2 mm long; **sepals** light dull orange, glabrous, the dorsal sepal broadly ovate, obtuse, low-carinate, 3 mm long, 2.25 mm wide, margins smooth, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, acute, margins denticulate, 3 mm long, 1.5 mm wide, 2-veined, connate 1 mm; **petals** dark orange-brown, shortly pubescent, transversely bilobed, 0.8 mm wide, 4 mm long, 3-veined, with a small apiculum on the outer margin between the lobes, the upper lobes broadly oblong, overlapping, obtuse, 1.75 mm wide, the lower lobe smaller, triangular, obtuse; **lip** dark orange-brown, bilaminate, the blades thin, minutely pubescent, oblong, obtuse, 1.5 mm long, adherent medially over the column, the connectives narrow, the body connate to the base of the column, the sinus bidentate above a hinged, saccate, pubescent appendix; **column** 1.5 mm long, the anther apical, the stigma ventral.

**Antioquia:** Mun. Jardín, Quebrada Cifuentes, alt. 2550 m, 28 Aug. 1984, *R. Escobar, L. & J. Posada, F. López & J. Cardenas 3405* (Holotype: MO), C. Luer illustr. 11399.

**Chocó:** epiphytic in cloud forest south of the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17685* (MO).

*Lepanthes saccata* is recognized by its weak habit with slender, wiry ramicauls bearing thin, drooping, long-acuminate leaves. As is the case with *L. mucronata*, two racemes are commonly produced simultaneously in the fold on top of the leaf: one very short, the other considerably longer. The dorsal sepal is broadly obtuse with smooth margins while the laterals are acute and denticulate. The petals are large and overlap each other above the column. The thin blades of the lip adhere over the column. The appendix, saccate beneath the bidentate sinus of the body, is the most distinctive floral feature, differentiating this species from a host of other relatives of *L. mucronata*.

**Lepanthes satyrica** Luer & Hirtz, Lindleyana 2(3): 141, 1987.

Ety.: Named for the Greek mythological satyrs, woodland companions of the gods Pan and Dionysus.

Syn.: *Lepanthes auspicata* Luer & R. Escobar, Orquideología 21(2): 138, 1999.

Ety.: From the Latin *auspicatus*, "fortunate," referring to the fortunate retention of the appendix.

**Plant** small, weak, epiphytic, caespitose; roots slender. Ramicauls suberect, very slender, 1-5 cm long, enclosed by 8-10 tightly fitting, minutely ciliate lepanthiform sheaths. **Leaf** suberect, coriaceous, striped in purple, very narrowly ovate, acute, 12-30 mm long, 4-5 mm wide, the sides more or less decurved, the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, successively few-flowered raceme up to 3 mm long, borne on top of the leaf by a filiform peduncle 4-5 mm long; floral bracts 0.75 mm long, minutely ciliate; pedicels 1.25 mm long; ovary 1 mm long; **sepals** red-orange, glabrous, margins minutely cellular-denticulate, the dorsal sepal ovate, obtuse, deeply concave below the middle,

3 mm long, 2.5 mm wide unexpanded, 3-veined, connate to the lateral sepals for less than 1 mm, the lateral sepals connate into an ovate, obtuse synsepal 2.75 mm long, 2.25 mm wide, each 2-veined, the apex shortly bifid, the apices approximate; **petals** yellow, transversely bilobed, 0.25 mm long, 3 mm wide, with a minute apiculum on the margin between the lobes or a middle lobe small, erect, on the outer margin opposite the base, the upper lobe oblong, obtuse, villous, the lower lobe longer, narrowly linear-triangular, acute, short-pubescent; **lip** purple, minutely pubescent, bilaminate, the blades thick, narrowly elliptical with the apices acute, 1.6 mm long, the connectives broadly cuneate, oblique, connate above the base of the column, the body with an elongated, descending, triangular process with an apical appendix vertically bilobed; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Valle del Cauca:** Mun. El Cairo, Cerro del Inglés, Serranía de los Paraguas, epiphytic secondary forest, alt. 2260-2300 m, 3 Jan. 1987, *P. Silverstone-Sopkin, N. Paz, R. T. González, I. Cabrera, D. Garcés & A. Henao 2909* (holotype of *L. auspicata*: CUVC; isotype: MO); Alto de Los Galápagos, at the pass between Valle del Cauca and Chocó, 2050 m, 13 May 1993, *C. Luer at al. 16806* (MO).

**Nariño:** collected by J. L. Aguirre, flowered in cultivation by J & L Orchids, Easton, Connecticut, 31 May 1997, *C. Luer 18513* (MO).

Also Ecuador (Imbabura, Holotype, *Luer et al. 12430*: MO; Esmeraldas; Carchi).

The very slender, almost hairlike ramicauls of this weak little species bend with the weight of narrow, purple-striped leaves. The short peduncle bears flowers with a characteristic deeply concave dorsal sepal and shortly bifid synsepal. The bilobed petals are very slender and pubescent, with a third lobe ranging from a small marginal angle to a more developed, erect lobe. The blades of the lip are thickened margins of the broad, cuneate connectives; and a long, triangular process descends from the body, with the appendix at the apex. The appendix is divided vertically into two segments.

The lip of *Lepanthes acrogenia* is similar, with a thick, blunt, protuberant body beneath the rostellar flap. In flowers of *L. satyrica*, the summit of this body bears a minute, precariously attached appendix. *Lepanthes acrogenia* is larger vegetatively and florally, with a long-pedicellate, distichous inflorescence bearing flowers with nearly free lateral sepals, and petals with the upper lobe larger than the lower.

## **Lepanthes scalaris** Luer, Phytologia 54(5): 369, 1983.

Ety.: From the Latin *scalaris*, "ladderlike," referring to the prolific habit of growth.

**Plant** medium in size, epiphytic, scandent; roots slender. Ramicauls slender, erect, prolific, 5.5-9.5 cm long, enclosed by 5-7 close lepanthiform sheaths, minutely ciliate at the ostia. **Leaf** erect, coriaceous, elliptical, acute, 20-36 mm long, 9-12 mm wide, cuneate below into a petiole 3-4 mm long. **Inflorescence** a loose, successively flowered raceme up to 7 cm long, the peduncle filiform, ca. 3 cm long; floral bracts 2.5 mm long; pedicels curved, 1.2 mm long; ovary 1.5 mm long; **sepals** glabrous, rosy salmon in color, the veins prominent externally, margins smooth, the dorsal sepal ovate, 7 mm long, 4.75 mm wide, 3-veined, the apex shortly acuminate, acute, the lateral sepals oblong, oblique, diverging, 8 mm long, 6 mm wide together, each 2-veined, connate to near the middle, the apices shortly acuminate; **petals** transversely oblong, 1.25 mm long, 5 mm wide, the upper lobe purple, the lower lobe smaller, orange; **lip** rosy brown, bilaminate, the blades oblong-lunate, the ends rounded, 2.2 mm long, the connectives cuneate, the body broad, connate to the base of the column, the appendix cup-shaped with a ciliate margin; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Nariño:** epiphytic in cloud forest, east slope of Volcán Galaris, alt. ca. 3200 m, 21 Jan. 1979, *C. Luer & J. Luer 3738* (SEL); collected by J. L. Aguirre, flowered in cultivation by J & L Orchids, Easton Connecticut, 31 May 1997, *C. Luer 18513* (MO).

**Putumayo:** Santiago, San Antonio de Bellavista, Páramo del Bordoncillo, alt. 3240 m, 19 Mar. 1999, *S. M. Pasmiño & M. R. Posso 26* (MO).

Also Ecuador (Carchi, Holotype, *Luer et al. 6255*: SEL).

This species is apparently endemic in high altitude cloud forests of southern Colombia and northern Ecuador. It is identified by the prolific habit and loose racemes that far exceed the leaf in length. The sepals are shortly acuminate; the

petals are oblong and obtuse; and the blades of the lip are ovate and obtuse. The appendix, hinged in the sinus, is globular and concave with marginal tufts of hairs.

In habit, *Lepanthes scalaris* resembles *L. superposita*, also known from southern Colombia. The latter is distinguished by flowers with reniform petals with a small marginal angle between the lobes; ciliate blades of the lip with truncate apices; and a cymbiform appendix with a minutely bifurcate segment. The other prolific Colombian species are differentiated by their larger leaves, supported by stouter and usually longer ramicauls.

**Lepanthes scopulifera** Luer & R. Escobar, Orquideología 20(3): 310-311, 1997, non *Lepanthes scopulifera* Luer.

Ety.: From the Latin *scopulifer*, "bearing a little brush," referring to the appendix.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls very slender, weak, erect, 4.5-6.5 cm long, enclosed by 8-10 microscopically scabrous, tightly fitting lepanthiform sheaths with acuminate apices. **Leaf** suberect, thinly coriaceous, narrowly ovate, acute, acuminate, 25-30 mm long, 5-6 mm wide, the base cuneate, contracted into a petiole less than 1 mm long. **Inflorescence** a congested, secund, long-pedicellate, successively several-flowered raceme up to 3 mm long, borne on top of the leaf by a filiform peduncle 11-14 mm long; floral bracts 1 mm long; pedicels 3 mm long; ovary sulcate, 0.6 mm long; **sepals** light brown, glabrous, membranous, carinate, widely spread, margins microscopically denticulate, the dorsal sepal narrowly ovate, obtuse, 3.3 mm long, 1.6 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the laterals broadly ovate, oblique, diverging, acute, 3 mm long, 1.3 mm wide, 2-veined, connate 1.3 mm; **petals** purple-brown, finely pubescent, transversely bilobed, 0.3 mm long, 3 mm wide, the upper lobe narrowly oblong, narrowly rounded at the tip, the lower lobe similar, shorter, oblique; **lip** purple-brown, bilaminate, the blades microscopically cellular or glabrous, narrowly elliptical-ovate, 1.6 mm long, with rounded ends, the apex minutely ciliate, the connectives cuneate, the body connate to the base of the column, the sinus obtuse, with a small, transverse, densely pubescent appendix; **column** 1 mm long, the anther dorsal and the stigma ventral.

**Antioquia:** epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2500 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17664* (Holotype: MO).

This small species is similar to many other species with thin, weak ramicauls and congested racemes shorter than narrowly ovate, acuminate leaves. *Lepanthes scopulifera* is distinguished by the very congested, secund, long-pedicellate raceme bearing small, brown, expanded flowers. The sepals are microscopically denticulate; the narrowly oblong petals are finely pubescent. The narrowly ovate blades of the lip are not remarkable, but the appendix is short, broad, and densely pubescent, resembling a minute brush.

**Lepanthes sericinitens** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(10): 1048, 1984.

Ety.: From the Latin *sericus,* "made of silk," and *nitens,* "shining," hence satiny, referring to the surface of the leaves.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-5 cm long, enclosed by 4-6 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, satiny dark green above, purple beneath, broadly ovate, obtuse, 15-24 mm long, 10-19 mm wide, the rounded base contracted into a petiole 3-4 mm long. **Inflorescence** a dense, distichous, successively flowered raceme up to 8 mm long, borne behind the leaf by a filiform peduncle 5-10 mm long; floral bracts 1 mm long, echinate; pedicels 1.75 mm; ovary 1 mm long; **sepals** rosy white, glabrous, ovate, obtuse, margins smooth, the dorsal sepal 2.5 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging, 2.5 mm long, 1.5 mm wide, 2-veined, connate 1 mm; **petals** bright red-purple, microscopically pubescent, transversely bilobed, 0.8 mm long, 2.8 mm wide, the lobes narrowly triangular, obtuse; **lip** bright red-purple, the blades ovate, pubescent, 1.2 mm long, more or less erose at the obtuse apices, the bases round, the connectives short, cuneate, the body narrow, connate to the base

of the column, the appendix a small ovoid organ on the external surface of the body below the sinus; **column** stout, 1.2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Yarumal, El Manicomio, alt. 2500 m, collected by E. Valencia, 23 April 1984, *C. Luer 10032* (Holotype: MO; Isotype: SEL); same collection, cultivated by L. & J. Posada at Colomborquídeas, El Retiro, flowered in cultivation 6 June 1984, *R. Escobar 3254* (COL, JAUM).

This little species is characterized by the erect, broadly ovate, dark satiny green leaves, purple on the back surface where the racemes are borne. The bilobed petals of the colorful flowers are microscopically pubescent; the lip is coarsely pubescent with ovate blades. The small appendix is situated on the external surface of the body of the lip.

The similar *Lepanthes atomifera* is distinguished by an ovate, acute leaf bearing a secund raceme. The sepals of another similar small species, *Lepanthes confusa*, are denticulate; the petals are pubescent; and the lip has an obtuse sinus with a relatively large, incurved, long-ciliate appendix.

**Lepanthes setifera** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(8): 822, 1984.

Ety.: From the Latin *setifer*, "bristle bearing," referring to the setiform appendix.

**Plant** medium to large, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 5-16 cm long, enclosed by 9-18 minutely ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, often suffused with purple beneath, ovate, acute, slightly acuminate, 5-9.5 cm long, 1.8-3 cm wide, the base cuneate or rounded, contracted into a petiole 2-4 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 25 mm long, borne behind the leaf by a slender peduncle 10-25 mm long; floral bracts 1-1.5 mm long, muricate; pedicels 1 mm long; ovary 1.5-2 mm long; **sepals** translucent greenish white, glabrous, margins smooth, the dorsal ovate, acute, slightly acuminate, 2.75-3.5 mm long, 1.75-2.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, acute, slightly acuminate, 2.75-3.25 mm long, connate 1.5-2 mm into a bifid synsepal 2.75 mm wide, each 2-veined; **petals** pale green to white with purple upper margins, microscopically pubescent, transversely bilobed, 1-1.25 mm long, 3-3.5 mm wide, the upper lobe oblong, obtuse, the lower lobe triangular, obtuse; **lip** greenish purple to rose-brown, microscopically pubescent, bilaminate, the blades ovate, concave, carinate along the inner margin, 1.5 mm long, the apex acute, incurved, with a few longer hairs, the base rounded, the connectives broadly cuneate, the body connate to the base of the column, the sinus protuberant with a small, erect, slender appendix; **column** terete, 1 mm long, the anther and stigma apical.

**Antioquia:** San Luis, Río Caldera, alt. 1600 m, collected June 1983 by E. Valencia, flowered in cultivation at Colomborquídeas, 29 Apr. 1984, *R. Escobar 3190* (JAUM, MO, SEL); Santo Domingo, 18 March 1989, *C. Luer 14228* (MO).

Also Ecuador (Pichincha, Holotype, *Luer et al. 9863*: MO; Esmeraldas; Imbabura; Bolívar).

This species is not uncommon in the Andes of Colombia and western Ecuador. The small flowers are superficially similar to those of *Lepanthes perdita*. The plant and flowers of *L. setifera* are usually larger, with translucent, acute sepals and greenish petals bordered in purple, rather than yellow sepals and yellow petals edged with red. The larger upper lobes of the petals of both species overlap above the column, but the broadly ovate upper lobe of *L. perdita* is proportionally much larger than the oblong lobe of *L. setifera.* The lip of *L. setifera* bears an appendix that is a slender bristle, while the appendix of *L. perdita* is short and oblong.

**Lepanthes silverstonei** Luer, Orquideología 22(1): 50, 2001.

Ety.: Named in honor of Dr. Philip Silverstone-Sopkin of the Universidad del Valle, Cali, Colombia, who discovered this species.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls suberect to horizontal, slender, 3-11 cm long, enclosed by 6-15 minutely ciliate lepanthiform sheaths with acuminate ostia. **Leaf**

more or less horizontal, more or less suffused with purple, thinly coriaceous, shallowly sulcate between longitudinal veins, ovate, acute, long-acuminate, 4-9 cm long, 2-2.8 cm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 8 mm or more long, borne on top of the leaf by a filiform peduncle 20-30 mm long; floral bracts 2 mm long; pedicels 2 mm long; ovary 3.5 mm long; **sepals** green, suffused with purple, glabrous, margins minutely ciliate, the dorsal sepal ovate, acute, slightly acuminate, 9 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, diverging, acute, 9 mm long, 3 mm wide, 2-veined, connate 2 mm; **petals** yellow, transversely bilobed, cellular-pubescent, 1 mm long, 10 mm wide, the upper lobe narrowly linear, acute, erect, 8 mm long, the lower lobe narrowly triangular, acute, much shorter; **lip** yellow, glabrous, bilaminate, the blades oblong with the ends rounded, 2.5 mm long, the connectives thick, cuneate, elongate, the body connate to the base of the column, the front surface of the sinus obtuse, filled by a triangular, pubescent membrane with a minute, flabellate apical segment; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Valle del Cauca:** El Cairo, Cerro del Inglés, Serranía de los Paraguas, alt. 2300 m, 1 Jan. 1987, *P. Silverstone-Sopkin 2864* (Holotype: CUVC; Isotype: MO), C. Luer illustr. 18470.

This species, known only from the original collection in the Western Cordillera of Colombia, is characterized by the more or less horizontal leaf that is shallowly, longitudinally grooved between prominent ribs. The congested, short-pedicellate inflorescence bears a comparatively large flower that lies upon the leaf. The sepals are acute; the upper lobes of the petals are erect, narrow, and nearly as long as the sepal underneath. The oblong blades of the lip are borne by thick, oblique connectives. The appendix is a triangular, pubescent membrane within the sinus. The similar flowers of *Lepanthes antennata* are borne by longer pedicels, and the blades of the lip are oblong with long-acuminate apices.

**Lepanthes sinuosa** Luer & R. Escobar, Orquideología 19(2): 113-115, 1994.

Ety.: From the Latin *sinuosus*, "very sinuous," referring to the margin of the leaf.

**Plant** small, weak, epiphytic, caespitose; roots slender. Ramicauls very slender, suberect to horizontal, 1.5-6.5 cm long, enclosed by 6-10 microscopically ciliate lepanthiform sheaths. **Leaf** suberect to spreading, thin, reticulate, with a sinuate margin, ovate, acute to subacute, 27-35 mm long, 12-18 mm wide, the base broadly cuneate into a petiole ca. 1 mm long. **Inflorescence** a very congested, subsecund, successively many-flowered raceme, up to 10 mm long, borne on top of the leaf by a filiform peduncle 10-20 mm long; floral bracts 0.5 mm long; pedicels overlapping, 2.5-3 mm long; ovary 1 mm long; **sepals** light yellow-green, glabrous, subcarinate, margins smooth, the dorsal sepal subcircular, 3.4 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, subacute, connate 1.6 mm, 3.4 mm long, 3.4 mm wide together, each 2-veined; **petals** purple on the outer and inner thirds, green on the middle third, minutely pubescent, transversely bilobed, 1 mm long, 3.5 mm wide, 1-veined, the lobes diverging, oblong, truncate, with the upper edge minutely erose, with a third lobe between the lobes, arcuate, slender, 1 mm long; **lip** greenish brown, thin, bilaminate, the blades microscopically pubescent, flat, falcate, adherent below the middle over the column, 1.6 mm long, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse with the appendix oblong, cymbiform, pubescent, with an apical bifid gland; **column** 1 mm long, with the anther dorsal and the stigma ventral.

**Risaralda:** above Pueblo Rico, epiphytic in wet forest along the road to the TV antenna, alt. 1630 m, 14 May 1993, *C. Luer, J. Luer, A. de Wilde & J. Gómez 16846* (Holotype: MO).

This species, known only from one area in the Western Cordillera, is similar to the common *Lepanthes mucronata*, but the leaves are distinctive. The thin leaves are ovate, acute, slightly acuminate, and reticulate with markedly sinuate margins. The flower lies upon the dorsum. The truncate apices of the lobes of the petals are erose, and a slender middle lobe about one millimeter long curves downward. The thin, flat blades of the lip are falcate and adhere to each other below the middle over the column. The appendix is boat-shaped and pubescent, with a bifid gland at the apex.

**Lepanthes skeleton** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(7): 722, 1984.

Ety.: From the Greek *skeletos*, "a skeleton or a bony framework," alluding to the long-pedicellate racemes.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls very slender, erect, 3-5.5 cm long, enclosed by 10-13 nearly glabrous lepanthiform sheaths with dilated ostia. **Leaf** erect, coriaceous, reticulate beneath, elliptical, acute, 15-18 mm long, 7-8 mm wide, the base cuneate into a petiole 1-1.5 mm long. **Inflorescence** a congested, long-pedicellate, distichous, successively many-flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 10-15 mm long; floral bracts 1 mm long, sparsely spiculate; pedicels 5-6 mm long; ovary crested, 1 mm long; **sepals** yellow, glabrous, denticulate on the margins and carinae, the dorsal sepal ovate, acute, concave, 3.75 mm long, 2.5 mm wide unexpanded, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals connate to near the apex into an ovate synsepal 3.5 mm long, 2.25 mm wide, each 2-veined; **petals** minutely pubescent, tripartite, the segments narrowly linear, the upper segment yellow, the middle segment yellow, 1.25 mm long, the lower segment orange, 1.5 mm long; **lip** red, pubescent, bilaminate, the blades narrowly oblong as thickened margins of broad, cuneate connectives, 1.2 mm long, the body broad, connate to the column above the base, the appendix large, narrowly triangular, pubescent, 0.8 mm long, protruding downward; **column** terete, 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Yarumal, above Quebrada El Oro, alt. 1850 m, 14 Feb. 1984, *R. Escobar & E. Valencia 3231* (Holotype: MO; Isotypes: COL, JAUM, SEL), C. Luer illustr. 9506; epiphytic in cloud forest along Río El Oro, north of Yarumal, alt. 2700 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10083* (MO); epiphytic in cloud forest remnant above El Cedro, alt. 2000 m, 16 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14204* (MO); cloud forest near Quebrada El Oro, alt. 1850 m, 16 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14203* (MO).

This species is similar to *Lepanthes heptapus*, but it is distinguished from the latter by broader leaves; very long-pedicellate, distichous racemes, rather than long-pedicellate, secund racemes; almost completely connate rather than free lateral sepals; and a lip with a thick appendix shorter than the blades, rather than a filament longer than the blades. The petals of both species divide into three diverging, pubescent, filiform segments.

**Lepanthes smaragdina** Luer & R. Escobar, Orquideología 19(2): 115, 1994.

Ety.: From the Latin *smaragdinus*, "emerald green," referring to the color of the petals.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-10 cm long, enclosed by 13-14 lepanthiform sheaths with dilated, ciliated ostia. **Leaf** suffused with purple, glabrous or minutely pubescent, concave-sulcate, spreading, coriaceous, ovate, acute, 4-6.5 cm long, 1.8-3.2 cm wide, the base rounded, contracted into a petiole 2 mm long. **Inflorescence** a congested, secund, successively many-flowered raceme, up to 10 or more mm long, borne in the sulcus on top of the leaf by a slender peduncle 10-15 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 2.5 mm long; **sepals** purple-brown with a thin yellow edge, flat, glabrous, margins minutely denticulate, the dorsal sepal transversely ovate, obtuse, minutely apiculate, 4 mm long, 4.25 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, 4 mm long, connate 1.5 mm into a transversely ovate synsepal, 4.75 mm wide, each 2-veined, with the acute, slightly acuminate apices in apposition with the tips overlapping; **petals** bright emerald green, minutely pubescent, transversely bilobed, 1 mm long, 3.5 mm wide, the upper lobe oblong, obtuse, the lower lobe triangular, narrowly obtuse; **lip** purple, glabrous, bilaminate, 2.5 mm long, the blades narrowly oblong, with the ends narrowly rounded, the connectives short, cuneate, the body narrow, connate to the base of the column, the appendix short, triangular; **column** 2 mm long, with the anther dorsal and the stigma ventral.

**Antioquia:** Dabeiba, Chimiadó, alt. 1700 m, collected by H. Angarita, July 1991, flowered in cultivation at Colomborquídeas, 27 Dec. 1992, *R. Escobar 5083* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16572.

This species is similar to the relatively frequent and widely distributed *Lepanthes manabina*, but the dorsal sepal of *L. smaragdina* is broadly ovate,

obtuse, tailless, and not concave. The lateral sepals are connate into a transversely ovate synsepal with an acute, split apex. Similar to *L. manabina*, the petals are emerald green, contrasting against dark, dull-colored sepals. The blades of the lip are round at the ends, and the appendix is triangular. *Lepanthes smaragdina* also resembles *L. ortiziana*, but the lateral sepals of the latter are spreading rather than approximate, and the petals are wider with more or less broadly uncinate, incurved upper lobes. The lips are similar with a minute, triangular appendix.

**Lepanthes solicitor** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(1): 58, 1985.

Ety.: From the Latin *solicitor*, "an enticer," referring to the large, intricate appendix, certainly an enticement for the pollinator.

**Plant** small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-11 cm long, enclosed by 8-11 close, microscopically ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, purple beneath, ovate, from 20 mm long and 14 mm wide to 60 mm long and 15 mm wide, the apex long-acuminate, the base round or cuneate, contracted into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively flowered raceme up to 8 mm long, borne on top of or beyond the leaf by a filiform peduncle up to 30 mm long; floral bracts 1.5 mm long; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** red-purple to orange-brown, glabrous, ovate, acute, slightly acuminate, carinate, margins minutely denticulate, the dorsal sepal 8 mm long, 5 mm wide, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals oblique, diverging, 8 mm long, connate 3.5 mm, 6 mm wide together, each 2-veined; **petals** orange, suffused with red-brown, microscopically pubescent, transversely bilobed, 1 mm long, 4.5 mm wide, with a short, acuminate point on the lateral margin between the lobes, the upper lobe oblong, obliquely truncate, the lower lobe narrowly linear, acute, subsigmoid; **lip** rose, microscopically pubescent, the blades elliptical with rounded ends, 1.66 mm long, elevated by broad, oblong connectives from the lower half of the blade, the broad body concave, the margin broadly hinged to a sigmoid, saccate, pubescent appendix, the apex with tufts of hairs; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** Toledo, epiphytic in cloud forest, Alto de Santa Inéz, alt. 1850 m, 13 May 1984, *C. Luer, J. Luer, E. Escobar & E. Valencia 10328* (Holotype: MO; Isotype: JAUM); epiphytic in cloud forest, Alto de Santa Inéz, alt. 2100-2250 m, 13 May 1984, *C. Luer, J. Luer, E. Escobar & E. Valencia 10319, 10328* (MO); same area, alt. 1880 m, 23 May 1982, *C. Luer, R. Escobar & D. Portillo 7954* (SEL); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 5 July 1984, *R. Escobar 3281* (COL, JAUM).

This species is characterized by the ovate, long-acuminate leaves usually surpassed by the inflorescence. The congested raceme is borne by a hairlike peduncle often as long as the leaf, so that the large flower hangs over the apex of the leaf. The flower is most remarkable for the large, intricate, pubescent appendix hinged from the sinus. This appendix is sigmoid in the lateral view, saccate with three terminal tufts of hairs.

**Lepanthes spelynx** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(5): 586, 1985.

Ety.: From the Greek *spelynx*, "a cave," referring to the deep cavity in the body of the lip.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, slender, 6-16 cm long, enclosed by 10-15 ciliate lepanthiform sheaths. **Leaf** purple beneath, spreading, coriaceous, narrowly ovate, acute, acuminate, 4-7.5 cm long, 1-1.8 cm wide, the rounded base contracted into a petiole 1.5-2 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 15 mm long, borne above or below the leaf by a filiform peduncle up to 5 cm long; floral bracts 2 mm long; pedicels 2.5-3.5 mm long; ovary 3 mm long, with cellular-erose margins of the ribs; **sepals** orange-brown, suffused with brown along the veins, glabrous, ovate, acute, slightly acuminate, carinate, margins minutely ciliate, the dorsal sepal 10 mm long, 5.5 mm wide, 3-veined, connate to the lateral sepals for 2 mm, the lateral sepals diverging slightly, connate 5 mm, 10 mm long, 7 mm wide together, each 2-veined; **petals** brown, microscopically pubescent, transversely bilobed, 1 mm long, 5.25 mm wide, with a 1 mm long setiform middle lobe on the outer margin between the major lobes, the upper lobe oblong, obliquely truncate with acute angles, the lower lobe narrowly triangular, acute; **lip** yellow

with brown margins and central stripe, microscopically pubescent, the blades lunate, 2.4 mm long, the apices rounded, the bases incurved and convex, concave below, the connectives cuneate, the body connate to the base of the column, saccate centrally with the appendix hinged from the anterior lip, the appendix ovoid, ciliate-margined, convex centrally, 1 mm long; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** Toledo, epiphytic in cloud forest, Alto de Santa Inéz, alt. 2250 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10329* (Holotype: JAUM; Isotype: MO); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 9 July 1984, *R. Escobar 3292* (COL, JAUM).

Also Venezuela (Mérida).

The large, brownish flowers of this species open singly in a very dense raceme borne by a long, capillary peduncle to overhang or exceed the acuminate apex of the leaf. The deep cavity of the body of the lip is reminiscent of the sympatric *Lepanthes foveata*, which is distinguished by sepals with smooth margins; petals with an oblong-ovate upper lobe; and a lip with oblong, concave blades.

**Lepanthes stelidilabia** Luer & R. Escobar, Orquideología 18(2): 146-148, 1991.

Ety.: Named for the similarity of the lip to a lip of a species of *Stelis*.

**Plant** small, epiphytic, caespitose; roots comparatively coarse. Ramicauls erect, slender, 2-3.5 cm long, enclosed by 6-10 microscopically ciliate, long-acuminate lepanthiform sheaths with dilated ostia. **Leaf** erect, coriaceous, ovate, acute, slightly acuminate, 15-25 mm long, 9-11 mm wide, the base cuneate, contracted into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 8 mm or more long, borne on top of the leaf by a filiform peduncle 8-10 mm long; floral bracts 0.75 mm long, minutely echinate; pedicels 1.5 mm long; ovary 1.25 mm long; **sepals** yellow, suffused with orange, glabrous, carinate, broadly ovate, acute, the dorsal sepal 3 mm long, 2.5 mm wide, margins smooth, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, diverging widely, margins denticulate, 3.5 mm long, 2 mm wide, 2-veined, connate 1 mm; **petals** transversely bilobed, pubescent, 1 mm long, 3.75 mm wide, the lobes about equal, ovate, oblique, obtuse, the upper lobe dull greenish orange, the lower lobe red-purple; **lip** bright red-orange, pubescent, thick, pyramid-shaped, triangular in outline from top, side or front views, concave beneath a transverse, shelf-like callus, the lateral angles finger-like, to either side of the column, the anterior lobe obtuse, minutely retuse, the base cuneate, connate to the base of the column; **column** terete, 1 mm long, the anther apical, the stigma subapical.

**Antioquia:** Sonsón, Alto de Guayaquil, alt. 2430 m, July 1985, collected by R. Escobar & E. Valencia, flowered in cultivation at Colomborquídeas, 18 Mar. 1989, *C. Luer 14229* (Holotype: MO).

Superficially, this species is unremarkable, with its small size; ovate leaves; a short, congested inflorescence on top of the leaf; and flowers with smooth-margined, broadly ovate sepals and transverse, pubescent petals. The *Stelis*-like lip, however, seems unique in the genus. It is shorter than the column, thick, and triangular when viewed from the top, side or front. Beneath a transverse, shelf-like callus across the middle under the column, the lip is deeply concave. The lateral lobes flank the column like short, blunt fingers. The lip of *Lepanthes strumosa* Luer & R. Escobar is similarly small and nearly invisible beneath the column, but the sepals are ovate and shortly acuminate with smooth margins, and the dorsal sepal is concave.

**Lepanthes stellaris** Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 115: 249, 2009.

Ety.: From the Latin *stellaris*, "with stars," alluding to the star-like flowers.

**Plant** small, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 4-6 cm long, enclosed by 5-6 ribbed, oblique, dilated, microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous,

ovate, acute, 2.5-3 cm long, 1.5 cm wide, the base broadly cuneate into a petiole ca. 3 mm long. **Inflorescence** 1-2 very congested, distichous, successively many-flowered racemes, up to 20 mm long, borne behind the leaf by a peduncle eventually 8-10 mm long; floral bracts ciliate, 1 mm long; pedicels 2-2.5 mm long; ovary 1 mm long; **sepals** yellow, glabrous, carinate externally, margins smooth, the dorsal sepal narrowly ovate, acute, 8 mm long, 2.25 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals narrowly ovate, oblique, diverging, acute, 8 mm long, 2 mm wide, 2-veined, connate less than 1 mm; **petals** yellow-orange, glabrous, transversely bilobed, 1 mm long, 4.5 mm wide, the lobes triangular, obtuse, the upper lobe slightly larger than the lower lobe, with the outer margin incurved at the midvein; **lip** purple, glabrous, bilaminate, the blades oblong with both ends rounded, 1.2 mm long, the connectives narrowly cuneate, the body narrow, connate to the base of the column, with the appendix erect, narrowly linear, pubescent at the tip; **column** 1.5 mm long, the anther apical, the stigma ventral.

**Valle del Cauca:** Mun. Yotoco, Alto de Minas, 17 Aug. 2009, *O. Pérez, A. Canizales & E. Sánchez 240* (VALLE).

Also Ecuador (Zamora-Chinchipe, Holotype, *A. Hirtz 8270*: MO).

Until recently, *Lepanthes stellaris* was known only from southeastern Ecuador. The flowers, with narrowly ovate, acute, free sepals; petals with both lobes similar, the upper lobe only slightly larger than the lower; and a lip with a long, slender, protruding appendix, are distinctive.

Similar species can be found both to the north and south of Colombia. *Lepanthes thylax* Luer & Hirtz, known only from southeastern Ecuador, is smaller vegetatively, with an inflorescence with a shorter peduncle bearing flowers approximately half the size, with a lip with a minute, oblong, hollow appendix. *Lepanthes acuminata* Schltr., known only from Mesoamerica and Mexico, differs in the broader petals and a lip with a minute, incurved, conical appendix.

**Lepanthes steyermarkii** Foldats, Acta Bot. Venez. 3: 346, 1968.

Ety.: Named in honor of Dr. Julian A. Steyermark, renowned botanist, who collected this species as well as many thousands of others.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 8-20 cm long, enclosed by 9-16 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-ovate, acute, acuminate, 6.5-10 cm long, 2.5-4 cm wide, the rounded base contracted into a petiole 5 mm long. **Inflorescence** a very congested, distichous, successively many-flowered raceme up to 15 mm long, borne beneath the leaf by a filiform peduncle 15-20 mm long; floral bracts imbricating, 1.5 mm long; pedicels 1.25 mm long; ovary 1.5 mm long; **sepals** light yellow, glabrous, subcarinate, ovate, acute, acuminate, margins smooth, the dorsal sepal 9 mm long, 3.75 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals oblique, diverging, 9.5 mm long, 3.25 mm wide, each 2-veined, connate 2 mm; **petals** yellow with red-brown upper edge, glabrous (at most microscopically pubescent), transversely bilobed, 1 mm long, 5 mm wide, with the lobes opposite, oblong, the upper lobe widest toward the obliquely truncate apex, the lower lobe smaller but similar; **lip** yellow, suffused with red centrally, microscopically pubescent, bilaminate, the blades subelliptical with thickened edges and with a central, longitudinal carina resembling the thickened edges, 1.6 mm long, subacute at the apices, round at the bases, held high above the column by thick, oblong connectives, the body connate to the column near the base, the sinus protuberant, obtuse, held beneath the stigma; **column** stout, semiterete, 1.5 mm long, the anther dorsal, the stigma ventral.

**Norte de Santander:** north of Toledo, Alto de Mefué, epiphytic in cloud forest, alt. 2600 m, 12 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10297* (MO).

Also from Venezuela (Táchira, *J. A. Steyermark, G. C. K. & E. Dunsterville 98381*: VEN).

This large species occurs in the far eastern mountains of the Eastern Cordillera of Colombia and adjacent Venezuela. It is characterized by a congested raceme of successive, large flowers borne behind the leaf. The sepals are acute, and the petals are transversely oblong with widened ends. The blades of the lip are most distinctive, each with a central carina resembling the thickened margins, and held high

above the column by thick, oblong connectives. Two other large Colombian species with mostly yellow flowers share a lip with blades that are thick between poorly defined calli: *Lepanthes orion* and *L. auriculata*. In both, the lateral sepals diverge widely and the lip bears an appendix in contact with the stigma.

**Lepanthes strumosa** Luer & R. Escobar, Orquideología 16(2): 151, 1984.

Ety.: From the Latin *strumosus*, "with a goiter," in allusion to the fancied appearance of the transverse lip beneath the column.

**Plant** small, epiphytic, caespitose; roots thick. Ramicauls slender, erect, 0.5-5 cm long, enclosed by 3-7 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple, ovate, acute, acuminate, 10-22 mm long, 5-10 mm wide, the base cuneate, contracted into a petiole 1 mm long. **Inflorescence** a congested, successively few-flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 4-10 mm long; floral bracts 1 mm long; pedicels 2 mm long; ovary 0.5 mm long, with low, irregular wings; **sepals** translucent light yellow or white, glabrous, ovate, carinate, acute, shortly acuminate, margins smooth, the dorsal sepal concave, 2.5 mm long, 1.5 mm wide, 3-veined, the lateral sepals oblique, diverging, 2.5 mm long, 1 mm wide, 2-veined, connate 1 mm; **petals** brown or orange, microscopically pubescent, transversely bilobed, 0.3 mm long, 1.6 mm wide, the lobes opposite, narrowly triangular, narrowly obtuse, the upper lobe slightly larger than the lower lobe; **lip** magenta, cellular-glandular, transversely cordate or lunate, 0.4 mm long, 0.75 mm wide, the apex broadly rounded, the lateral angles narrowly obtuse, the base connate to the undersurface of the column; **column** stout, terete, 0.5 mm long, with the anther and stigma apical.

**Antioquia:** Briceño-Valdivia, alt. 1820-1880 m, 20 May 1983, *R. Escobar & E. Valencia 2625* (Holotype: SEL), C. Luer illustr. 9102.

Although first discovered in the Central Cordillera of Colombia, this little species has been found locally on the both the eastern and western slopes of the Andes of Ecuador. It is characterized by a small, weak habit with ovate, acuminate leaves; and a somewhat shorter inflorescence of a few small flowers. Most distinctive is the tiny, transverse lip almost hidden beneath a larger column, like a bow tie beneath a fat chin. The lip of *Lepanthes stelidilabia* is similarly small and hidden beneath the column, but the latter species is distinguished by a congested inflorescence bearing flowers with broadly ovate, acute, denticulate sepals.

**Lepanthes stupenda** Luer, Phytologia 54(5): 372, 1983.

Ety.: From the Latin *stupendus*, "stupendous," referring to the size of the flower.

**Plant** medium to large in size, epiphytic, caespitose; roots thick, coarse. Ramicauls slender, erect, 5-28 cm long, enclosed by 8-14 lepanthiform sheaths with microscopically ciliate ostia. **Leaf** erect, thinly coriaceous, reticulated, ovate, acute, acuminate, 5-15 cm long, 2-5.5 cm wide, the broadly cuneate to rounded base contracted into a petiole 4-5 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 30 mm long, borne by a filiform peduncle 15-28 mm long behind the leaf; floral bracts 2 mm long; pedicels 1.5 mm long; ovary 2 mm long, narrowly winged; **sepals** light yellow to greenish white, papillose-pubescent below the middle, margins smooth, the dorsal sepal ovate, acute, acuminate, 16 mm long, 6.5-8 mm wide, 3-veined, connate basally to the lateral sepals for 2.5 mm, the lateral sepals ovate, oblique, diverging, acute, acuminate, connate 6-8 mm, 16 mm long including the 4-mm long caudae, 10 mm wide together, each 2-veined; **petals** yellow, edged in purple, transversely elliptical, bilobed, 1.66-2 mm long, 3-3.2 mm wide, the lobes triangular-ovate, obtuse, the lower lobe much shorter; **lip** white, edged in purple, bilaminate, the blades ovate-oblong, narrowly obtuse to acute, microscopically pubescent, 2.5-3 mm long, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse, protuberant and membranous, bearing a minute, pedunculate, pubescent, bifid appendix; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Santander:** El Taladro, near Virolín, alt. 2400 m, collected by E. Valencia, February 1991, flowered in cultivation at Colomborquídeas, 12 Dec. 1992, *R. Escobar 5023* (MO).

Also Ecuador (Imbabura, Holotype, *Luer et al. 6042*: SEL; Pichincha).

This large species occurs locally in forests on the western slopes of the Andes of northern Ecuador, with a single collection known from north central Colombia. It is identified by the congested raceme much shorter than the large leaf with an acuminate apex. The flowers are large, more than three centimeters in length between the tips of the dorsal and lateral sepals. The sepals are pubescent within below the middle; the petals are small and obtuse; and the blades of the lip are ovate. It is distinguished from the other mostly yellow-flowered, large species by the size and pubescence of the acuminate sepals, the laterals with short caudae.

In the type description, the appendix was thought to be the membranous protrusion of the sinus, but later collections reveal that the appendix is a minute, pedunculate organ at the apex of this membrane. The appendix no doubt had been lost from the flower originally described.

**Lepanthes subulata** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(6): 609, 1984.

Ety.: From the Latin *subulatus,* "awl-shaped," referring to the apices of the leaves.

**Plant** weak, small, epiphytic, caespitose; roots filiform. Ramicauls suberect, very slender, 4-10.5 cm long, enclosed by 7-11 thin, close, microscopically scabrous lepanthiform sheaths. **Leaf** erect to suberect, thinly coriaceous, reticulated, elliptical-ovate, 3.5-5 cm long, 1.1-1.6 cm wide, the acute apex contracted into a narrow, linear segment 12-18 mm long, tridenticulate, the middle tooth longest, the base cuneate into a 0.5 mm long petiole. **Inflorescence** a very congested, successively flowered raceme up to 8 mm long, borne on top of the leaf by a filiform peduncle 6-17 mm long; floral bracts 0.75 mm long, minutely scabrous; pedicels 2 mm long; ovary 2 mm long; **sepals** translucent light orange with purple veins at the base, glabrous, margins minutely denticulate, the dorsal sepal broadly ovate, obtuse, 3.5 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals diverging slightly, connate 1.5 mm into a bifid synsepal similar in size and shape to the dorsal sepal, each 2-veined; **petals** bright orange, suffused with red, microscopically pubescent, transversely bilobed, 1.5 mm long, 3.75 mm wide, with a minute angle on the outer margin between the subequal lobes, the upper lobe broadly triangular, oblique, obtuse, the lower lobe oblong, obtuse; **lip** purple, the blades semicircular, 1.66 mm long, thin, membranous, microscopically ciliate, adherent medially over the column, the connectives from the bases, erect, narrowly oblong, the body rounded with an obovate, pubescent appendix hinged from the center; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Mun. Yarumal, above Quebrada El Oro, alt. 1850 m, 20 May 1983, *R. Escobar & E. Valencia 2624* (Holotype: SEL), C. Luer illustr. 9101; same locality, 14 Feb. 1984, *R. Escobar & E. Valencia 3237* (JAUM, MO, SEL, COL); Yarumal, epiphytic in forest remnant along the road to Briceño, Quebrada El Oro, alt. 1850 m, 16 March 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14183* (MO).

This weak little species is similar to many others, especially those with very slender ramicauls bearing leaves with an elongated, subulate apex, including the widespread *Lepanthes mucronata*. The short, congested raceme bears small flowers with obtuse, denticulate sepals; bilobed petals with a tiny angle between the lobes; and a lip with thin, adherent blades borne above the column by narrow connectives connate to the bases. The flowers of the similar *L. palaga* also have colorful petals overlying pastel, broadly ovate sepals, but are distinguished by smooth-margined sepals and petals with the upper lobe oblong.

**Lepanthes superposita** Schltr., Repert. Spec. Nov. Regni Beih. 7: 100, tab. 34, n. 129, 1920.

Ety.: From the Latin *super*, "above," and *positus*, "situated," referring to the prolific habit.

**Plant** medium in size, epiphytic, scandent; roots slender. Ramicauls slender, erect, prolific, 6-9 cm long, enclosed by 5-7 lepanthiform sheaths, minutely ciliate at the ostia. **Leaf** erect, coriaceous,

elliptical, acute, 2-4 cm long, 0.7-1.30 cm wide, cuneate below into a petiole 3-4 mm long. **Inflorescence** a lax, successively flowered raceme up to 15 cm long, the peduncle filiform, ca. 3-4 cm long; floral bracts 1.75 mm long; pedicels 0.75 mm long; ovary 1.5 mm long; **sepals** light tan in color, glabrous, margins smooth, the dorsal sepal ovate, acute, slightly acuminate, 9.5 mm long, 4.5 mm wide, 3-veined, connate to the lateral sepals for ca. 1 mm, the lateral sepals connate 5 mm into an ovate synsepal with the apices acute, slightly acuminate, diverging, 10 mm long, 5.75 mm wide, each 2-veined; **petals** red, transversely oblong, ends rounded, 1.25 mm long, 5 mm wide, the lobes subequal in size, with a small marginal angle between the lobes; **lip** red, bilaminate, the blades shortly pubescent, ovate, the apices obliquely truncate, the bases rounded, 2 mm long, the connectives cuneate, connate to the base of the column, the sinus broad with the appendix external, on the body, ciliate, cymbiform with a minutely bifurcate terminal segment; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Cauca:** without collection data, collected by M. Madero s.n. (Holotype destroyed at B, Lectotype designated here: tab. 34, n. 129 in Schlechter, 1920); Páramo de Puracé, alt. 3200 m, 14 Nov. 1982, *C. Luer, J. Luer, R. Escobar & E. Valencia 8389* (SEL); Puracé, alt. 2800-2900 m, collected by E. Valencia, May, 1992, flowered in cultivation at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5204* (MO).

**Cundinamarca:** Chingasa, alt. 3000 m, date unknown, collected and flowered in cultivation by Arturo Carrillo, June 2009, *L. Thoerle 124* (MO).

**Nariño:** epiphytic in scrub forest in the páramo between La Cocha and Putumayo, alt. 3000 m, 26 Jan. 1987, *C. Luer, J. Luer, C. H. Dodson, O. de Benavides, R. Escobar & E. Valencia 12523* (MO).

This species is known from high altitude cloud forests in southern and central Colombia. It is identified by its prolific habit and loose racemes far exceeding the leaf in length. The sepals are slightly acuminate; the petals are reniform, with lobes that are oblong and obtuse with a small marginal angle between; and the blades of the lip are ovate and obtuse with truncate apices. The appendix, on the body external to the sinus, is oblong and concave with a bifid terminal segment.

*Lepanthes superposita* most closely resembles *L. scalaris*, which is also known from southern Colombia. The latter is distinguished by flowers with transversely oblong petals without a marginal angle; the lip with narrow connectives attached near the bases of the glabrous blades; and a cuplike appendix. The other prolific Colombian species are differentiated by their larger leaves, supported by stouter and usually longer ramicauls.

## **Lepanthes tachirensis** Foldats, Acta Bot. Venez. 3: 348, 1968.

Ety.: Named for the Venezuelan state of Táchira, where the species was collected.

**Plant** medium to large, epiphytic, caespitose; roots slender. Ramicauls slender to stout, erect, 5-35 cm tall, enclosed by 10-18 pale tan, glabrous lepanthiform sheaths with non-dilated ostia. **Leaf** erect, coriaceous, narrowly ovate-elliptical, acute, 5-9 cm long, 1-2.5 cm wide, the base cuneate into a petiole 3-4 mm long. **Inflorescence** a subcongested, distichous few- to many-flowered raceme up to 30 mm long, borne by a slender peduncle 10-35 mm long, borne behind the leaf; floral bracts 1.5-2 mm long; pedicels 1.5-2 mm long; ovary 2-2.5 mm long; **sepals** light yellow, light tan, to white, glabrous, ovate, subacute, slightly acuminate, margins minutely denticulate, the dorsal sepal 4.5-5 mm long, 2-3 mm wide, 3-veined, connate to the lateral sepals for 0.5-1 mm, the lateral sepals oblique, diverging 180°, 4.5-5 mm long, 2-3.75 mm wide, 1-veined, connate for 1 mm; **petals** orange with purple margin, transversely bilobed, 1-1.5 mm long, 3-4.5 mm wide, the upper lobe oblong, subtruncate, with a prominent, fingerlike lobule on the inner apical angle, overlapping, the lower lobe smaller, triangular; **lip** usually red or purple, bilobed with blades narrowly elliptical for the basal two-thirds, the apical third obtuse without forming a blade, the base narrowly obtuse, 2-2.25 mm long, the connectives short, broadly cuneate, the body broad, connate to the base of the column, the appendix small, ovoid, pubescent in the sinus; **column** 2 mm long, the anther dorsal, elongate, stigma apical.

**Antioquia:** north of Santa Rosa de Osos, above Estadero Manicomio, alt. 2850 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14140* (MO).

**Norte de Santander:** epiphytic in cloud forest, Alto de Mefué, north of Toledo, alt. 2600 m, 12 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10302* (MO).

**Chocó:** epiphytic in cloud forest south of the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1985, *C. Luer, J. Luer, R. Escobar, et al. 17682* (MO).

**Quindio:** road to Tocha from Salento, alt. 2300 m, 10 May 1993, *C. Luer, J. Luer, R. Escobar & A. de Wilde 16745*(MO).

**Nariño:** epiphytic in scrub forest in the páramo between La Cocha and Putumayo, alt. 3000 m, 26 May 1987, *C. Luer, J. Luer, C. H. Dodson, O. de Benavides, R. Escobar & E. Valencia 12521* (MO).

Also Ecuador (Carchi, Imbabura, Pichincha, Morona-Santiago, Loja, Tungurahua, Zamora-Chinchipe), Venezuela (Táchira, Holotype, *J. A. Steyermark, G. C. K. & E. Dunsterville 98524*: VEN).

This species is frequent and widely distributed at high altitudes through the Andes from Venezuela to southernmost Ecuador. The ramicauls are tall and clad in pale, glabrous, nondilated sheaths. The inflorescence bears colorful flowers in a subdense raceme that may equal the slender leaf in length. The sepals are acute and minutely denticulate, with the laterals single-veined and spreading in opposite directions. The characteristic petals are provided with fingerlike lobules on the upper inner margin of the upper lobes, which overlap one another. The blades of the lip are narrow, with the acute apices devoid of blade. *Lepanthes speciosa*, from northwestern Ecuador, is another large species with predominantly yellow flowers with single-veined lateral sepals and a similar lip, but the denticulate lateral sepals diverge less widely, about 90 degrees; and the upper lobe of the petals is subcircular and concave.

**Lepanthes tamaensis** Foldats, Acta Bot. Venez. 3: 351, 1968.

Ety.: Named for Tamá, the area where this species was originally collected.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-3.5 cm long, enclosed by 3-4 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 8-20 mm long, 6-8 mm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** an erect, lax, distichous, flexuous, successively many-flowered raceme up to 8 cm long, borne by a filiform peduncle 1-1.5 cm long; floral bracts minutely spiculate, 1.5 mm long; pedicels 1.5 mm long; ovary costate, 1 mm long; **sepals** yellow, or yellow suffused with light brown, glabrous, margins smooth, the dorsal sepal ovate, subacute, slightly acuminate, 5-7 mm long, 2.25-4.25 mm wide, 3-veined, connate to the lateral sepals about a fourth the length, the lateral sepals ovate, oblique, diverging, acute, 5.25-7 mm long, 2-veined, connate about half the length into an ovate, bifid synsepal, 5-8.5 mm wide; **petals** purple to yellow with red medially, transversely bilobed, microscopically pubescent, 1 mm long, 1.8-3.5 mm wide, the lobes similar, oblong-triangular, narrowed above the base, obtuse; **lip** red-purple, pubescent, bilaminate, the blades oblong with the ends obtuse, 1.5-2 mm long, the connectives cuneate, the body connate above the base of the column, the appendix small, oblong to triangular, pubescent; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Alto de Pollo, flowered in cultivation at Colomborquídeas, 5 Mar. 1989, *C. Luer 14099* (MO); Urrao, Rogelia, alt. unknown, flowered in cultivation at Colomborquídeas, JM #93, 18 March 1989, *C. Luer 14226* (MO); without collection data, flowered in cultivation by Martha and Oscar Robledo at La Ceja, 19 Mar. 1989, *C. Luer 14268* (MO).

**Norte de Santander:** epiphytic in cloud forest below Páramo de Jurisdicciones, between Ocaña and Pamplona, alt. 2600 m, Nov. 10-11 1981, *C. Luer, J. Luer, R. Escobar & D. Portillo 6625, 6639* (SEL); Alto de Mefué, epiphytic in cloud forest, alt. 2600 m, 12 May 1982, *C. Luer, J. Luer, R. Escobar & E. Valencia 7804* (SEL); same area, alt. 2500 m, 12 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10287* (MO); Páramo de Jurisdicciones, alt. 2650 m, collected Apr. 1982, flowered in cultivation at Colomborquídeas, 26 Apr. 1983, *C. Luer 8849* (SEL); epiphytic in cloud forest below the Páramo de Jurisdicciones, alt. 2600 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10216, 10217* (MO); Alto de San Francisco above Villacaro, alt. 2850 m, 11 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10268* (MO).

Also Venezuela (Táchira, Holotype, *J. A. Steyermark, G. C. K. & E. Dunsterville 98658*: VEN).

This little species is restricted to westernmost Venezuela and adjacent easternmost Colombia. The elliptical leaves are surpassed by a lax, flexuous raceme of small, successive flowers with ovate sepals; and petals with subequal, oblong-

triangular lobes narrowed above the bases. The sepals and petals of *Lepanthes marthae* are similar, but it is readily distinguished by the petals connate to the column above the dilated base.

**Lepanthes tanekes** Luer & R. Escobar, Orquideología 18(2): 148, 1991.

Ety.: From the Greek *tanekes*, "long-pointed," referring to the long-acuminate apex of the leaf.

**Plant** small, epiphytic, caespitose; roots fine. Ramicauls very slender, suberect, 3-6.5 cm long, enclosed by 6-7 closely applied, microscopically scabrous lepanthiform sheaths. **Leaf** suberect to spreading, veined in purple, thinly coriaceous, ovate, acute, long-acuminate, 25-35 mm long including the long-acuminate apex 12-15 mm long, 10-15 mm wide, the base rounded, contracted into a petiole about 1 mm long. **Inflorescence** a very congested, distichous, successively many-flowered raceme up to at least 5 mm long, borne on top of the leaf by a slender peduncle 10-12 mm long; floral bracts 0.5-0.75 mm long; pedicels 0.5-0.75 mm long; ovary 0.75 mm long; **sepals** translucent orange, glabrous, margins smooth, the dorsal sepal broadly ovate, subacute, 2.33 mm long, 2.33 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals connate into a broadly ovate synsepal, shortly bifid into 2 acute apices, 2.5 mm long, 2.33 mm wide, each 2-veined; **petals** yellow, microscopically pubescent, transversely bilobed, 0.9 mm long, 3.4 mm wide, the upper lobe ovate, narrowly obtuse, the lower lobe equally long, narrowly triangular, acute; **lip** red, bilaminate, the blades narrowly elliptical, the apices subacute, the bases narrowly rounded, 1.2 mm long, the connectives broadly cuneate, the body broad, connate to the column above the base, the sinus occupied by a thick, ovoid, bisegmented, minutely pubescent appendix; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Nariño:** epiphytic in cloud forest above Ricaurte, alt. 1600 m, 3 Nov. 1979, *A. Hirtz, C. Luer, J. Luer, A. Hirtz & K. Walter 4625* (Holotype: SEL); trail from La Planada to Pielapi, wet lower montane cloud forest, alt. 1600-1800 m, 22 July 1988, *A. Gentry, O. de Benavides, C. Samper, P. Velasquez & B. Ramirez 63656* (MO).

Vegetatively, this species is distinguished by the long-acuminate apex of the leaves, a character shared by many species affiliated with *Lepanthes mucronata*; the very congested, distichous raceme borne on top of the leaf; a broadly ovate dorsal sepal and synsepal; bilobed petals with a narrowly acute lower lobe; and a lip with a thick, ovoid, bisegmented appendix. Unusually for this group, the petals of *L. tanekes* are wider than a sepal is long.

**Lepanthes telipogoniflora** Schuit. & A. de Wilde, Orquideología 20(1): 27, 1996.

Ety.: Named for the superficial similarity of the flower to one of the genus *Telipogon* Kunth.

**Plant** very small, epiphytic, caespitose; roots fine. Ramicauls slender, erect, 9-11 mm long, enclosed by 4-5 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 8-10 mm long, 7-7.5 mm wide, the base broadly cuneate into a petiole less than 1 mm long. **Inflorescence** a lax, successively few-flowered raceme with flowers ca. 2 mm apart, borne by a slender peduncle 10-15 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 1.5 mm long; **sepals** orange to red-brown with narrow, yellow margins, glabrous, carinate, smooth-margined, 3-veined, the dorsal sepal transversely ovate, broadly obtuse, 7 mm long, 11 mm wide, connate to the lateral sepals for 5 mm to create a subcircular, flat flower, the lateral sepals transversely ovate, broadly obtuse, 6.5 mm long, 7 mm wide, connate 4 mm into a flat synsepal 14 mm wide; **petals** orange, 3-lobed, 2.75 mm wide, the lobes slender, linear ca. 1-1.5 mm long, the upper and middle lobes minutely ciliate, the lower lobe long-ciliate, slightly longer than the upper lobes; **lip** orange, glabrous, 3-lobed, 2 mm wide across the lateral lobes expanded, the lateral lobes bilobed, 1.5 mm long, the upper parts ovate, subacute, embracing the column, the lower parts narrowly triangular, extending forward, the bases (connectives) of the lateral lobes broadly cuneate, forming a broad body, connate to the undersurface of the column above the base, the appendix (middle lobe) filiform, 2.3 mm long, protruding forward; **column** slender, 1.75 mm long, the anther dorsal, the stigma ventral.

**Risaralda:** Western Cordillera, ridge between Río San Juán and Río Agüita, alt. 500 m, Apr. 1995, *A. de Wilde, A. Schuiteman, et al. 5010* (Holotype: JAUM), C. Luer illustr. 18096.

This rare, little species is distinguished by its minute size with ramicauls about one centimeter long and elliptical leaves barely as long, dwarfed by a colorful and comparatively immense flower. The sepals are transversely ovate, obtuse, and deeply connate into a flat, subcircular, orange to red-brown flower nearly one and one-half centimeters in diameter. The petals are tripartite with filiform lobes. The ovate upper portions of the blades of the lip surround the column while the lower portions are narrowly triangular. The appendix is represented by a protruding, filiform process nearly two and one-half millimeters long.

**Lepanthes tetracola** Luer & R. Escobar, Orquideología 19(2): 116, 1994.

Ety.: From the Greek *tetrakolos*, "with four legs," referring to the long lobes of the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-8 cm long, enclosed by 7-9 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 30-35 mm long, 9-12 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, distichous, subsecund, successively several-flowered raceme, up to 5 mm long, borne in front of the leaf by a filiform peduncle 3-5 mm long; floral bracts 1 mm long; pedicels 2 mm long; ovary 2 mm long; **sepals** yellow, glabrous, margins cellular-denticulate, the dorsal sepal ovate, acute, 4.5 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, obtuse, very shortly acuminate, 3.8 mm long, 2.4 mm wide, 2-veined, connate 1 mm; **petals** orange, microscopically pubescent, transversely bilobed, 0.75 mm long, 8.5 mm wide, the lobes opposite, linear, acute, about equal in size, the lower lobe ciliate; **lip** red-purple, bilaminate, the blades glabrous, narrowly oblong, oblique, 2 mm long, with the rounded apices minutely ciliate, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse, with the appendix membranous, mucinous, in contact with an appendage from the stigma; **column** 1.5 mm long, with the anther dorsal and the stigma ventral.

**Antioquia:** Abejorral, collected by M. Zapata, Nov. 1992, flowered in cultivation at Colombor-quídeas, 19 May 1993, *C. Luer 16875* (Holotype: MO); epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2500-2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17656, 17659, 17661* (MO).

This species is distinguished by exceedingly long, narrow petals that are longer than the length of the dorsal and lateral sepals combined. The margins of the sepals are cellular-denticulate. The blades of the lip are glabrous except for the minutely ciliate apices. The appendix is reduced to a bit of amorphous membrane associated with a short, cylindrical process from the stigma. *Lepanthes petalolenta*, also known from Antioquia, has similar petals but with an indentation between the lobes, and a lip with blades that are ovate and pubescent.

**Lepanthes tibouchinicola** Luer & R. Escobar, Amer. Orchid Soc. Bull. 52(12): 1269, 1983.

Ety.: Named for *Tibouchina* Aubl., a genus of small melastomaceous trees, one species of which is apparently the specific host for this species of *Lepanthes.*

**Plant** small to medium in size, epiphytic, caespitose; roots fine. Ramicauls slender, erect, 1-3 cm long, enclosed by 3-4 close, microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly elliptical, acute, 2-3.5 cm long, 0.3-0.5 cm wide, narrowly cuneate below to the subpetiolate base. **Inflorescence** a progressively lengthening, secund, sublaxly many-flowered raceme up to 23 cm long including the comparatively stout peduncle 5-7 cm long, 2-3 flowers open simultaneously; floral bracts 3 mm long; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** bright yellow to orange, often suffused with brown toward the base, margins minutely irregular, the dorsal sepal glabrous, transversely ovate, the obtuse apex acuminate into a slender cauda, 13 mm long including the cauda, 6 mm wide, 3-veined, connate to the lateral sepals for 2.5 mm, the lateral sepals minutely pubescent, connate 5 mm into a concave, ovate, acute, bifid synsepal, 16 mm long including the approximate, long-acuminate apices, 7 mm wide, each 2-veined; **petals** minute, orange, transversely bilobed, 0.5 mm long, 1.5 mm wide, with a minute tooth on the outer margin, the upper lobe oblong, broadly obtuse, the lower lobe

smaller, triangular, narrowly obtuse; **lip** dull purple, the blades narrowly ovate, 1 mm long, convex, minutely pubescent, the ends rounded, the connectives narrowly cuneate, short, the narrow body connate to the base of the column, the appendix oblong, apiculate, glabrous; **column** stout, 1 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Yarumal, Ratón Pelado, alt. 2700 m, 22 May 1983, *R. Escobar & E. Valencia 2660* (Holotype: SEL), C. Luer illustr. 9107; same locality, Nov. 1975, *R. Escobar et al. s.n.* (JAUM); same area, alt. 2650 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10053* (MO); Caldas, Alto de San Miguel, alt. 2730 m, 27 Jan. 1974, *R. Escobar et al. 1117* (JAUM); Jardín, Alto de Ventanas, alt. 2850 m, 26 May 1983, *R. Escobar, L. & J. Posada, et al. 2716* (SEL); Jardín, alt. 2700-2790 m, 29 Oct. 1988, *J. L. Zarucchi, G. McPherson & F. J. Roldán 6923* (HUA).

**Caldas:** Jardín-Riosucio, in disturbed montane forest, Alto de Ventanas, alt. 2700-2790 m, 29 Oct. 1988, *J. L. Zarucchi, G. McPherson & F. J. Roldán 6923* (HUA).

According to Sr. Rodrigo Escobar, this species grows exclusively on *Tibouchina lepidota* trees, known locally as "Sietecueros." *Lepanthes tibouchinicola* produces an elongating raceme of numerous large, bright yellow to orange flowers, two or three open simultaneously, with a flower fading below and several buds forming above. The minute petals are half hidden behind the lobes of the lip.

**Lepanthes tomentosa** Luer, Lindleyana 6(2): 76, 1991.

Ety.: From the Latin *tomentosus*, "covered with rather rigid, short hairs," referring to the integument of the mature leaves.

Syn.: *Lepanthes dapaënsis* P. Ortiz, O. Pérez & E. Parra, Orquidelogía 28(1): 23.
Ety.: Named for Dapa, in the municipality of Yumbo, where it was collected.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls erect to horizontal to pendent, slender, 2-12 cm long, enclosed by 5-15 thin, minutely ciliate lepanthiform sheaths with dilated ostia. **Leaf** erect, coriaceous, reticulated or suffused with purple, juvenile leaves glabrous, mature leaves glabrous to shortly pubescent, elliptical-ovate, acute, slightly acuminate, sometimes concave and sulcate, 2-5 cm long, 1-2 cm wide, with the base cuneate into a petiole 2-4 mm long. **Inflorescence** a congested, secund, successively many-flowered raceme up to 3 cm long, borne on top of the leaf by a peduncle 10-12 mm long; floral bracts minutely scabrous, 1-2 mm long; pedicels 1-2 mm long; ovary 2 mm long; **sepals** rose to purple brown, often with green margins, glabrous, carinate, margins denticulate, the dorsal sepal triangular to ovate, acute, 6.5-8 mm long, 3-5 mm wide, 3-veined, the apex acuminate into a slender cauda, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, 7 mm long, connate 2 mm into an ovate synsepal 3.5-5.5 mm wide together, each 2-veined, acuminate into slender caudae with apices approximate to diverging, 2-3 mm long; **petals** yellow-green to reddish orange-brown, microscopically pubescent, transversely bilobed, 0.5-1.2 mm long, 3.3-6 mm wide, the lobes similar, subfalcate with the apices acute to obtuse, incurved upper lobe slightly broader than lower; **lip** yellow-green to brown, often white toward the center of the blades, glabrous to microscopically pubescent, bilaminate, with the blades oblong-ovate, flat with the apices narrowly obtuse, 2-2.5 mm long, with the connectives short, cuneate, with the body connate to the base of the column, with the appendix 3-lobed, sometimes in contact with the margin of the stigma; **column** 1.5 mm long, with the anther apical and the stigma ventral.

**Cundinamarca:** "San Miguel," probably collected by Janet Kuhn, J & L #1, obtained from J & L Orchids, Easton, Connecticut, by P. & A. Jesup, flowered in cultivation in Bristol, Connecticut, 5 May 1990, *C. Luer 13786* (Holotype: MO).

**Valle del Cauca:** Munic. Yumbo, Dapa, alt. 2100 m, ca. 9 May 2010, *O. Pérez & E. Parra 751* (holotype of *Lepanthes dapaënsis*: CUVC).

**Cauca:** Volcán Puracé, data unknown, flowered in cultivation by Arturo Carrillo, June 2009, *L. Thoerle 105* (MO).

*Lepanthes tomentosa*, once thought to be rare in nature, has recently been identified in Valle del Cauca and Cauca, and seems to be widespread and frequently encountered. The immature leaves of *Lepanthes tomentosa* are completely glabrous, but the mature leaves are covered by a short pubescence. The subdense racemes begin to flower while they are still much shorter than the leaf, but

eventually approach the length of the leaf. The sepals are denticulate and caudate. The lobes of the petals are falcate; the blades of the lip are glabrous to microscopically pubescent; and the tridentate appendix is short, sometimes reduced to a small, transverse strip with the lobes barely discernable.

*Lepanthes dapaënsis* was described as differing vegetatively in its pendent growth habit and the presence of a membranous margin along the apical portion of the leaves. The former is dependent upon age and orientation, while the latter is unremarkable and not unusual in the genus. Floral size and color are variable, particularly when comparing a plant in the wild with a cultivated specimen; it is not surprising that the flowers of *L. dapaënsis* are slightly larger than those of the cultivated type specimen. Another criterion used to discriminate between the two species was the presence of a "foot-like appendix" descending from the column of *L. dapaënsis.* This is the protruding lower margin of the extended stigmatic cavity in profile, present in the type specimen of *L. tomentosa* but not illustrated in the original drawing. The amended drawing included in this volume clearly shows the prominent lower margin of the concave stigma.

**Lepanthes tracheia** Rchb. f., Flora 69: 557, 1886.

Ety.: From the Greek *tracheia*, "the trachea," possibly alluding to the lepanthiform-sheathed ramicaul.

Syn.: [≡ *Lepanthes caucana* Schltr., nom. illeg., Repert. Spec. Nov. Regni Veg. Beih. 27: 159, 1924].

Ety.: Named for the department of Cauca where the species was collected.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-7 cm long, enclosed by 8-12 minutely ciliate lepanthiform sheaths. **Leaf** erect, rigidly coriaceous, suffused with purple, broadly ovate to subcircular, obtuse, slightly convex, 10-20 mm long, 7-19 mm wide, the base rounded to cordate, contracted into a petiole 1-2 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 10 mm long, borne behind the leaf by a filiform peduncle 8-12 mm long; floral bracts muricate, 1 mm long; pedicels 0.75 mm long; ovary 1 mm long; **sepals** yellow, orange to dull red, glabrous, margins denticulate, the dorsal sepal broadly ovate, obtuse, 3 mm long, 2.3 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, the lateral sepals broadly ovate, oblique, diverging widely, acute, 2.6 mm long, 3 mm wide, 2-veined, connate 0.5-1 mm; **petals** red-orange, or orange with red border, microscopically pubescent, transversely bilobed, 1 mm long, 3.75 mm wide, the upper lobe oblong-falcate with the acute apex everted, the lower lobe red-orange, oblong-triangular, obtuse; **lip** red-orange to purple, microscopically pubescent, bilaminate, the blades elliptical, concave, with narrowly rounded ends, 1.75 mm long, the connectives cuneate, forming a narrow body, connate to the column above the base, the sinus filled with a large, oblong, 1-mm long, pubescent appendix with a terminal pubescent segment; **column** stout, 2 mm long, the anther dorsal, the stigma ventral.

**Cauca:** Popayán, Feb. 1882, *F. C. Lehmann 3562* (Holotype unspecified, Lectotype here designated: W 54518); *F. C. Lehmann 3562* (holotype of *L. caucana*: W).

Also Venezuela (Táchira); Ecuador (Carchi, Sucumbíos, Pichincha, Napo, Tungurahua, Morona-Santiago, Zamora-Chinchipe); Peru (Cuzco).

This species is widely distributed in the Andes from Venezuela into Peru. A congested raceme of colorful flowers is borne beneath the small, rigid, purplish, broadly ovate, obtuse leaf. The sepals are coarsely denticulate. The upper lobes of the petals are uncinate, the apices pointing outward. The blades of the lip are ovate and concave; and the large, pubescent, oblong appendix bears a terminal gland.

Two other small Colombian species share the broadly ovate, obtuse leaf and small, colorful flowers borne in a short, congested raceme: *Lepanthes confusa* and *L. sericinitens*. Both have petals with obliquely triangular upper lobes, rather than the characteristic uncinate, everted lobes of *L. tracheia.*

Although Reichenbach did not provide a type citation, the specimen *Lehmann 3562* is exhaustively described, adequately illustrated, and labeled as "Lep. tracheia" in Reichenbach's own hand. We follow Reichenbach's intentions and designate this collection as the lectotype. Several decades later, Schlechter cited this same specimen as the type for his *Lepanthes caucana*, an illegitimate name.

**Lepanthes transparens** Luer, Phytologia 54(5): 374, 1983.

Ety.: From the Latin *transparens*, "transparent," referring to the thin, membranous blades of the lip.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls suberect, slender, 5-12 cm long, enclosed by 9-11 close, ciliate lepanthiform sheaths with markedly dilated ostia. **Leaf** suberect, thinly coriaceous, reticulate, ovate, acuminate, acute, 3.5-5 cm long, 1.8-2.5 cm wide, the rounded base abruptly contracted into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 5 mm long, borne by a filiform peduncle up to 12 mm long on top of the leaf; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 2.5 mm long; **sepals** light greenish tan, glabrous, carinate, margins denticulate-serrulate, the dorsal sepal triangular, 6 mm long, 4.5 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the acute apex shortly acuminate, the lateral sepals connate 2 mm into an ovate, acute, bifid synsepal, 5.75 mm long, 4.75 mm wide, the shortly acuminate apices approximate, each 2-veined; **petals** yellow, suffused with purple, microscopically pubescent, transversely oblong, 1.2 mm long, 4.25 mm wide, the upper lobe oblong, truncate, the lower lobe smaller, narrowly falcate, acute; **lip** brown, bilaminate, the blades lunate, thin, membranous, transparent, minutely ciliate, 2 mm long, 0.75 mm wide, the connectives narrow, erect, elevating the blades over the column, the body more or less rounded, with a slender, basal claw parallel to the column and connate at the base, the appendix oblong, shortly pubescent, associated with an appendage from the stigma; **column** slender, clavate, 2 mm long, the anther dorsal, the stigma ventral.

**Cauca:** epiphytic in cloud forest, Páramo de Barbillas, alt. 3150 m, 13 Nov. 1982, *C. Luer & R. Escobar 8381* (SEL).

**Nariño:** road from La Coche to Putumayo, alt. 3000 m, 6 June 2009, *L. Thoerle, L. E. Álvarez, A. Carillo, P. Ortiz, J. Pfahl 113A* (MO).

Also Ecuador (Pastaza, Holotype, *C. Luer et al. 6260*: SEL; Carchi).

This species, found occasionally on the eastern slopes of the Andes from southern Colombia to northern Ecuador, is similar to the frequently encountered and widely distributed *Lepanthes contingens*. The two concepts are very similar and might be merely two variations of one species, but the lips are either notched or entire without intermediates. *Lepanthes transparens* is distinguished by entire, lunate blades of the lip, instead of the narrowly oblong blades strongly angled on the inner margins below the apex that characterize *L. contingens*. Both species share a lip attached to the column by a long, slender claw; and an appendix that is in contact with an appendage from the stigmatic cavity.

**Lepanthes trichocaulis** Luer & R. Escobar, Orquideología 17(3): 224-226, 1988.

Ety.: From the Greek *trichocaulos*, "hairy stemmed," referring to the long-ciliate lepanthiform sheaths.

**Plant** medium in size, epiphytic, caespitose; roots filiform. Ramicauls slender, erect, 4-7.5 cm long, enclosed by 10-14 long-ciliate lepanthiform sheaths with dilated ostia. **Leaf** erect, coriaceous, broadly elliptical, 3.5-4 cm long including the petiole 4-5 mm long, 2 cm wide, the obtuse apex abruptly acuminate, the base cuneate or rounded, contracted into the petiole. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 15-20 mm long; floral bracts 1.5 mm long, echinate; pedicels 1.5 mm long; ovary 3 mm long; flower colors unknown, **sepals** glabrous, carinate, margins microscopically ciliate, the dorsal sepal broadly ovate, obtuse, 3.25 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, the lateral sepals broadly ovate, oblique, diverging widely, obtuse, 3 mm long, 2.2 mm wide, 2-veined, connate 1.75 mm; **petals** microscopically pubescent, transversely bilobed, 1.4 mm long, 3.4 mm wide,

the upper lobe subcircular, the lower lobe smaller, oblong, obtuse; **lip** cellular-pubescent, subcordate-bilobed, 1.8 mm long, the lobes with round, erect, basal angles embracing the column, connate to the base of the column, the obtuse apex minutely cleft; **column** 1 mm long, the anther and stigma apical.

**Antioquia:** Yarumal, Briceño, Quebrada El Oro, alt. 1820 m, collected by R. Escobar & E. Valencia, 14 February 1984, flowered in cultivation by L. & J. Posada at Colomborquídeas, 26 March 1984, *R. Escobar 3245* (Holotype: MO), C. Luer illustr. 11535.

This handsome species is identified by the dilated, long-ciliate cauline sheaths; broadly oblong, obtuse leaves with abruptly acuminate apices; and short inflorescences bearing a succession of flowers. The upper lobes of the petals are large and rounded; the cordate lip is only minutely cleft at the obtuse apex. *Lepanthes trichocaulis* is distinguished from other Colombian species with similarly broadly ovate sepals and petals with a rounded upper lobe much larger than the lower, more or less triangular lobe by its bladeless, cordate, cleft lip.

**Lepanthes trifurcata** Luer & R. Escobar, Orquideología 19(2): 119, 1994.

Ety.: From the Latin *trifurcatus*, "trifurcate," in reference to the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-6 cm long, enclosed by 7 microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, ovate, acute, 3.5 cm long, 1.4 cm wide, the base cuneate into the petiole 2 mm long. **Inflorescence** a subcongested, distichous, successively few-flowered raceme, 3-5 mm long, borne behind the leaf by a filiform peduncle 5-7 mm long; floral bracts slightly muriculate, 1.5 mm long; pedicels 1 mm long; ovary 2 mm long; **sepals** yellow-white, glabrous, the dorsal sepal subelliptical, acute, slightly acuminate, margins smooth, 6.5 mm long, 3.3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals narrowly ovate, oblique, diverging slightly, margins denticulate, 6.5 mm long, 2 mm wide, 1-veined, barely connate at the base; **petals** white with the tips of the lobes yellow, crimson at the base, minutely pubescent, deeply trilobed, the lobes similar, diverging, narrowly triangular, acuminate, about 1 mm long, about 2 mm long to the tip of the middle lobe, 4 mm wide between the tips of the upper and lower lobes; **lip** rose, pubescent, deeply bifid, the lobes falcate, 1.3 mm long, embracing the column, with connectives short and narrow, barely converging to form a narrow body, connate to the middle of the column, the appendix external, recurved, narrowly oblong, sparsely pubescent; **column** semiterete with a large clinandrium, 2 mm long, with the anther and the stigma apical.

**Probably Antioquia:** without collection data, flowered in cultivation at Colomborquídeas, 5 May 1993, *C. Luer 16720* (Holotype: MO).

**Antioquia:** Mun. Urrao, Vereda la Honda, Páramo del Sol, bosque bien conservado en el camino para subir al páramo, alt. 3400 m, Jul. 27 2011, *S. Vieira 0008* (JAUM).

*Lepanthes trifurcata* is characterized by an ovate, acute leaf with much shorter, few-flowered inflorescences. The relatively large flower has acute sepals with the laterals single-veined and denticulate. The petals are three-pronged, with the prongs narrowly acuminate and diverging. The lip is deeply bifurcated into falcate lobes that do not form blades. The narrow connectives form a narrow body that is connate about midway to the undersurface of the column. The slender appendix recurves from the outside of the body. The petals of another small Colombian species with single-veined lateral sepals, *L. linealis*, are similarly three-lobed, but with obtuse rather than acute lobes, and the lip has well developed blades.

**Lepanthes trimerinx** Luer, Phytologia 54: 374, 1983.

Ety.: From the Greek *tri*, "three," and *merinx*, "a bristle," referring to the three slender tails of the flower.

**Plant** minute, epiphytic, caespitose; roots proportionally fleshy. Ramicauls 1-2 mm long, enclosed by 2 imbricating sheaths with sparsely ciliate ribs and margins. **Leaf** erect, coriaceous, elliptical, obtuse, 6-8 mm long, 4 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a

congested, few-flowered raceme borne by a filiform peduncle up to 10 mm long; floral bracts 0.5 mm long; pedicels 2 mm long; ovary 0.75 mm long, ribbed; **sepals** yellow, glabrous, ovate, 2 mm long, 1.5 mm wide, connate basally, margins serrulate-ciliate, the acute apices contracted into slender caudae, 1.5-5 mm long, 1-veined, laterals diverging widely; **petals** yellow, suffused with red, minutely pubescent, transversely bilobed, 0.5 mm long, 1.75 mm wide, the upper lobe narrowly triangular, obtuse, the lower lobes smaller, triangular, acute; **lip** red with yellow margins, minutely pubescent, 4-lobed (H-shaped), 1.5 mm long, 1.5 mm wide, the halves transversely oblong or bilobed with rounded anterior and posterior lobes, the posterior lobes embracing the column, the base between them connate to the undersurface of the column near the middle, with a minute apiculum in the sinus between the anterior lobes; **column** 0.75 mm long, the anther and stigma apical.

**Valle del Cuauca:** epiphytic on *Rapanea* Aubl., Restrepo, Vereda de Roman, cerca a Río Grande, vertientes de Río Grande; bosque de neblina, alt. 1800 m, 22 May 1988, *J. E. Ramos, C. Reyna & A. Reyna 954* (MO).

Also Ecuador (Pastaza, Holotype, *Luer 1019*: SEL; Pichincha).

This tiny species is rare, having been found only a few times in isolated collections in Ecuador and Colombia. *Lepanthes trimerinx* is distinguished by the abbreviated ramicauls; a few-flowered raceme longer than the minute leaf; long-tailed, fringed sepals; and an H-shaped lip without blades. The tiny plant with a spidery, long-caudate flower resembles *Lepanthes limbata* in both respects, but the flowers of the latter have two-veined lateral sepals, a lip with oblong blades, and nestle underneath the centers of the leaves.

**Lepanthes trinaria** Luer & R. Escobar, Orquideología 20(3): 311, 1997.

Ety.: From the Latin *trinarius*, "with three parts," referring to the petals.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2.5-4 cm long, enclosed by 8-10 minutely ciliate lepanthiform sheaths with oblique apices. **Leaf** erect, coriaceous, cordate-ovate, subacute, 16-22 mm long, 10-16 mm wide, the base broadly cuneate to subcordate, contracted into a petiole 1 mm long. **Inflorescence** a sublax, successively 2- to 3-flowered raceme up to 2 mm long, borne on top of the leaf by a filiform peduncle 10-14 mm long; floral bracts 1 mm long; pedicels 3-3.5 mm long; ovary 1.5 mm long; **sepals** translucent yellow-green, glabrous, membranous, carinate, widely spread, the dorsal sepal ovate, subacute, 4 mm long, 2.5 mm wide, margins sparsely minutely ciliate, 3-veined, barely connate to the lateral sepals, the lateral sepals ovate, oblique, diverging, subacute, 3.5 mm long, 1.8 mm wide, 2-veined, connate 1 mm, margins smooth; **petals** brown, trifurcate, the upper lobe forked into a filiform inner segment 2 mm long, and a slender, outer segment 3 mm long, with the distal half ciliate, the lower lobe narrowly triangular, 1.5 mm long; **lip** purple, bilaminate, the blades glabrous (microscopically cellular-pubescent), flat, elliptical, horizontal, 1.6 mm long, with the ends obtuse, the connectives broad, the body broad, connate to the column near the middle, the sinus obtuse, with the appendix oblong, pubescent, bilobed at the apex; **column** slender, 2 mm long, the anther dorsal with the anther-cap apparently not deciduous, the stigma subapical.

**Antioquia:** epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 12 Dec. 1994, flowered in cultivation at Colomborquídeas, 23 May 1995, *C. Luer 17530* (Holotype: MO), *17529* (MO).

This species is known only from one mountain pass in the Western Cordillera of Colombia. The plant is small, with subcordate leaves and a shorter, few-flowered inflorescence. The sepals are ovate. The petals are deeply trifurcate with the central segment the largest and longest, and this segment is ciliate on the outer half. The rest of the petal is glabrous. The blades of the lip are held transversely over a protruding column. The connectives are broad, forming a broad body connate to the column near the middle. The appendix is oblong and protruding with a bilobed apex. The petals of the similar *Lepanthes alcicornis* have a forked rather than entire lower lobe.

**Lepanthes troglodytes** Luer & R. Escobar, Amer. Orchid Soc. Bull. 54(3): 320-321, 1985.

Ety.: From the Greek *troglodytes*, "a cave dweller," referring to the tiny, hinged appendix which may be reflexed forward or retracted backward into a cavity in the lip.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to ascending, 5-14 cm long, enclosed by 9-12 ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, ovate, acute, slightly acuminate, 5-8 cm long, 2-3.5 cm wide, the sides more or less deflexed below the middle, the base cuneate, contracted into a twisted petiole 1-1.5 mm long. **Inflorescence** a congested, distichous, successively flowered raceme up to 18 mm long, borne beneath the leaf by a filiform peduncle 15-30 mm long; floral bracts 1 mm long; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** yellow, glabrous, ovate, acute, margins smooth, the dorsal sepal 4.5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, connate 2 mm, 4.5 mm long, 4 mm wide together, each 2-veined; **petals** yellow-orange, suffused with purple, microscopically pubescent, transversely reniform, 1.5 mm long, 3.5 mm wide, 3-veined, the lobes ovate with rounded apices, the upper lobe much larger; **lip** orange, suffused with purple, glabrous, the blades flat, 2 mm long, acute at the apices, obtuse at the bases, the connectives very broadly cuneate, the body broad and thick, with a cavity on the anterior surface into which the hinged, oblong, pubescent appendix fits when retracted, connate to the base of the column; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Briceño, Río Espiritu Santo, Quebrada Negra, alt. 500 m, collected by E. Valencia, 28 April 1984, *C. Luer 10031* (Holotype: JAUM; Isotype: MO); same collection, flowered in cultivation by J. & L. Posada at Colomborquídeas, El Retiro, 19 June 1984, *R. Escobar 3269* (COL, JAUM).

**Chocó:** epiphytic in wet forest, Río Ura, alt. 50-100 m, collected by H.-G. Seeger, September 1986, flowered in cultivation at B.G. Heidelberg 0-1918, 1 Sep. 1987, *C. Luer 12901* (MO); "Epifita del estrato arboreo altas en ramas delgadas. Planta poco frecuente de 0 a 100 mts. sobre el nivel del mar," August 1991, *G. Misas Urreta 294* (HPUJ).

The thin leaves of this species are more or less deflexed toward the base. Most remarkable is the thick body of the lip with a small anterior cavity into which the little appendix may swing out of sight. The appendix may be withdrawn by retracting the tip outward. The appendix of *Lepanthes oscillifera* is similarly mobile, but the sepals are translucent purple with minutely ciliate margins, and the sides of the usually smaller leaf are not deflexed at the base.

*Lepanthes troglodytes* is similar to the Panamanian *L. pachyglossa* Luer and the western Colombian and Ecuadorian *L. vellicata* Luer & Hirtz. All three species are usually found at relatively low altitudes and share a leaf with deflexed sides at the base, imparting a pinched appearance. *Lepanthes vellicata* is distinguished by ciliate sepals, while *L. pachyglossa* is distinguished by petals with the lower lobe broadly uncinate, and a lip with blades shorter than and flanking the column.

**Lepanthes troxis** Luer & R. Escobar, Orquideología 18(2): 150-152, 1991.

Ety.: From the Greek *trox*, "a caterpillar," alluding to the seemingly gnawed petals and the presence of the caterpillar-like appendix.

**Plant** medium in size, epiphytic, caespitose; roots coarse. Ramicauls slender, erect, 3-10 cm long, enclosed by 8-12 coarsely ciliate lepanthiform sheaths with dilated apices. **Leaf** dark purple, coriaceous, the immature leaves ovate, acute, flat, 2-4 cm long, 1.2-1.7 cm wide, the mature leaves spreading, narrowly ovate, acute, acuminate, 4-7.5 cm long, 1-1.5 cm wide, the margins revolute and undulate, the midrib prominent beneath, the rounded base convex, contracted into a petiole 2 mm long. **Inflorescence** a subdense, successively flowered raceme up to 8 mm long, borne on top of the leaf by a filiform peduncle 8-10 mm long; floral bracts 1.5 mm long; pedicels 1 mm long; ovary 2.5 mm long; **sepals** dark rose with broad yellow borders, glabrous, ovate, acute, carinate, margins minutely denticulate, the dorsal sepal 5 mm long, 3.75 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging, 5 mm long, 2.25 mm wide, 2-veined, connate 1.5 mm; **petals** yellow, suffused with rose on the margins, microscopically pubescent, transversely bilobed, 1 mm long, 3.25 mm wide, the upper lobe oblong, oblique, with the apex truncate and coarsely erose, the lower lobe triangular, acute; **lip** rose, the blades very thin, glabrous, elliptical, with the apices angled on the inner margin, 2 mm long, the connectives and body narrow, connate to the base of the column by a

long, slender claw, the appendix vermiform, ciliate, in contact with a vermiform appendage from the stigma; **column** very slender, clavate, the anther dorsal, the stigma ventral.

**Cundinamarca:** epiphytic in cloud forest above Gutierrez, alt. 2700 m, 19 May 1984, *C. Luer, J. Luer & R. Escobar 10366* (Holotype: MO; Isotype: JAUM); same collection, flowered in cultivation by L. & J. Posada at Colomborquídeas, El Retiro, 19 June 1984, *R. Escobar 3265* (COL, JAUM).
**Risaralda:** Belen de Umbria, alt. 2700 m, flowered in cultivation at El Jordan, 12 Sep. 1992, *A. de Wilde 3967* (MO).

This species resembles the commonly encountered *Lepanthes contingens*, which is found in both Colombia and Ecuador. The leaf of *L. troxis* is distinctive, with recurved, undulate margins. The flowers of *L. contingens* have entire rather than erose petals, with the upper lobe longer than the lower lobe; and a lip with an appendix that is relatively short and oblong, rather than slender, long-ciliate, and wormlike. The species share thin blades of the lip notched in front; a long, slender claw connecting the lip to the base of a very slender column; and a peculiar fingerlike appendage from the stigma.

**Lepanthes tsubotae** Luer & R. Escobar, Orquideología 19(1): 30, 1993.

Ety.: Named in honor of Shigenobu Tsubota of Pereira, Colombia, who discovered this species.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-7 mm long, enclosed by 2-3 microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 11-13 mm long including the petiole, 6-7 mm wide, cuneate below into a petiole 1-1.5 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 6 mm long, borne beyond the leaf by a slender peduncle 15 mm long; floral bracts echinate, 1.5 mm long; pedicels 1.5 mm long; ovary 1 mm long, the ribs with a few spicules; **sepals** red, carinate, flat, glabrous, with minutely irregular margins, the dorsal sepal transversely ovate, 5 mm long, 5.5 mm wide, 3-veined, connate to the lateral sepals for 2.5 mm, the apex obtuse, contracted into a filiform cauda 4 mm long, the lateral sepals broadly ovate, oblique, diverging widely, connate 2 mm, 6 mm long, 5 mm wide, 2-veined, the apices obtuse, contracted into filiform caudae 3 mm long; **petals** red, glabrous (microscopically cellular-pubescent), transversely bilobed, 4 mm long, 2 mm wide, the lobes equal in size and shape, triangular, acute; **lip** red, bilaminate, essentially glabrous, elliptical and slightly concave below the narrowly obtuse apices, 2 mm long, the connectives narrow, the body connate to the base of the column, the sinus broad, concave, with a thick, ovoid, pubescent appendix; **column** 1 mm long, the anther apical, 1 mm long, the stigma subapical.

**Valle del Cauca:** epiphytic in forest above Lago Calima, alt. 1950 m, collected by S. Tsubota, 1985, flowered in cultivation at Ran Nursery, near Pereira, 15 March 1991, *C. Luer 15261* (Holotype: MO).

This tiny species is distinguished by the peduncle longer than the leaf, bearing a comparatively very large (as large as the leaf), flat, red flower successively in a congested raceme. The sepals are broad, obtuse, and contracted into short, fine tails. The petals are diamond-shaped, with each lobe an equilateral triangle. The blades of the lip are shallowly concave below a narrowly obtuse apex; the connectives are narrow; and the appendix is thick and pubescent. The protruding apical anther is relatively large.

**Lepanthes umbonata** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(10): 1050, 1984.

Ety.: From the Latin *umbonatus,* "bossed," referring to the low convexities on the outer surface of the body of the lip.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-9 cm long, enclosed by 10-11 close, glabrous to microscopically scabrous lepanthiform sheaths. **Leaf** spreading to deflexed, thinly coriaceous, elliptical-ovate, 20-41 mm long, 11-19 mm wide, the apex obtuse, abruptly

contracted into a linear segment, the rounded base abruptly contracted into a petiole ca. 1 mm long. **Inflorescence** a distichous, very congested, successively flowered raceme up to 13 mm long, borne on top of the leaf by a filiform peduncle 3-7 mm long; floral bracts 0.75 mm long, pedicels 1.25 mm long, ovary 1.5 mm long; **sepals** yellow, glabrous, margins smooth, the dorsal sepal triangular, acute, 4 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, diverging, acute, 3.75 mm long, 1.6 mm wide, 2-veined, connate 1.25 mm; **petals** yellow-orange, suffused with red toward the base, glabrous to microscopically cellular-pubescent, transversely bilobed, 1 mm long, 4.5 mm wide, 3-veined, with or without with a minute marginal lobule between the lobes, the upper lobe triangular, acute, the lower lobe similar but smaller; **lip** yellow, suffused with red, glabrous, the blades oblong, 1.75 mm long, with the ends rounded, adherent medially over the column, the connectives narrowly oblong from above the middle of the blades, the body more or less bossed inferiorly and to either side of the sinus, connate to the base of the column, the sinus obtuse, the appendix broadly strap-shaped, concave, pubescent, with a thickened, prow-like apex; **column** 1.5 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Frontino, Alto de Cuevas, alt. 2000 m, 14 May 1983, collected by R. Escobar & E. Valencia, flowered in cultivation at Colomborquídeas, El Retiro, 22 Jan. 1984, *R. Escobar 3206* (Holotype: MO; Isotype: JAUM), C. Luer illustr. 9497.

**Nariño:** epiphytic in cloud forest above Ricaurte, alt. 1600 m, 3 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4623* (SEL).

This species with deflexed, abruptly long-acuminate leaves is similar to *Lepanthes mucronata*. *Lepanthes umbonata* is distinguished by petals with upper lobes acute rather than truncate, and a lip supported by connectives originating above the middle rather than at the base. The bossing on the lower side of the body of the lip and to either side of the sinus is most distinctive.

**Lepanthes uncifera** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(5): 480, 1984.

Ety.: From the Latin *unciferus,* "hook bearing," referring to the lower lobes of the petals.

**Plant** large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 25-29 cm tall, enclosed by 17-18 microscopically ciliate-scabrous lepanthiform sheaths. **Leaf** erect, thinly coriaceous, oblong, 10-11 cm long, 3.5-3.8 cm wide, the apex acute, acuminate, the base rounded, abruptly contracted into a petiole 4 mm long. **Inflorescence** a very congested, distichous, successively flowered raceme up to 15 mm long, borne behind the leaf by a filiform peduncle 40-50 mm long, the flowers large; **sepals** lemon-yellow, glabrous, margins smooth, the dorsal sepal triangular-ovate, 13 mm long, 5 mm wide, 3-veined, connate basally to the lateral sepals for 1.5 mm, the lateral sepals ovate, oblique, diverging, acute, acuminate, connate 5 mm, 11.5 mm long, 8.5 mm wide together, each 2-veined; **petals** yellow with red margins, long-pubescent, transversely bilobed, 2.5 mm long, 5 mm wide, the upper lobe obliquely triangular, obtuse, the lower lobe broadly oblique and abruptly contracted into an acute, recurved, uncinate apex; **lip** yellow-orange, suffused with red, essentially glabrous, the blades ovate, 3.8 mm long, the apices acute, the bases rounded, the connectives broadly cuneate, connate to the column above the base, the appendix minute, pedunculated, pubescent, more or less quadrangular, hinged at the obtuse sinus; **column** 3 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Yarumal, Ratón Pelado, alt. 2700 m, 22 May 1983, *R. Escobar & E. Valencia 2668* (Holotype: SEL), C. Luer illustr. 9110; same collection, flowered in cultivation at Colomborquídeas, El Retiro, 22 Jan. 1984, *R. Escobar 3209* (JAUM, MO); same area, alt. 2650 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10052* (MO).

**Chocó:** epiphytic in cloud forest south of the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17680* (MO).

This robust species is distinguished from other large species with mostly yellow flowers borne on short, congested racemes by the long-pubescent petals with an uncinate lower lobe. The uncinate lower lobe of the petals of the equally large *Lepanthes nicolasii* also curves outward, but both the upper and lower lobes are slender and effectively glabrous.

**Lepanthes uribei** Luer, Revista Soc. Boliv. Bot. 4(1): 11, 2003.

Ety.: Named in honor of Juan Carlos Uribe, in whose collection this species is cultivated.

**Plant** large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 15 cm long, enclosed by 12-13 microscopically scabrous lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical-ovate, obtuse, slightly acuminate, 6.5 cm long, 3.75 cm wide, the base rounded, contracted into a petiole ca. 2 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 10 mm long, borne behind the leaf by a slender peduncle 25 mm long; floral bracts oblique, acute, echinate, 2-3 mm long; pedicels 2-2.75 mm long; ovary 1.75 mm long; **sepals** carinate, glabrous, ovate, obtuse, shortly acuminate, the dorsal sepal 5 mm long, 4 mm wide, 3-veined, margins smooth, connate to the lateral sepals for 1.5 mm, the lateral sepals minutely ciliate on the outer margins, oblique, diverging widely, 5 mm long, 3.5 mm wide, connate 1.75 mm, 2-veined; **petals** microscopically cellular, unequally transversely bilobed, 4 mm wide, 1-veined, the upper lobes subquadrate, truncate, 3 mm long, 2.75 mm wide, slightly overlapping, the lower lobes triangular, acute, 1 mm long, less than 1 mm wide; **lip** bilobed, faintly forming blades, microscopically pubescent, 1.5 mm long, the lobes oblong, acute at the apex, rounded at the base, with the connectives broad, oblique, the body connate to the base of the column, with the appendix small, pubescent, bilobed, in the obtuse sinus; **column** stout, 1.5 mm long, the anther dorsal and the stigma apical.

**Valle del Cauca:** collecting data unknown, flowered in cultivation at Orquídeas del Valle, January 2001, *A. Niessen & J. C. Uribe 095* (Holotype: MO), C. Luer illustr. 19901.

This species is characterized by its large size and a congested, successively flowered raceme shorter than the elliptical leaf. The sepals are obtuse and shortly acuminate. The upper lobes of the petals are proportionally large and subquadrate; the much smaller lower lobes are acutely triangular. The lobes of the lip are oblong and merely flank the column without forming well-defined blades. The appendix is small, pubescent, and bilobed. The even larger *Lepanthes gargantua* shares similarly sized flowers with broadly ovate sepals with diverging, acuminate apices, but with the dorsal sepal deeply connate to the smooth-margined lateral sepals, and petals with the larger upper lobe oblong and rounded.

**Lepanthes valenciae** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(8): 825, 1984.

Ety.: Named in honor of Eladio Valencia of Medellín, Colombia, who discovered this species.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls suberect, slender, 5-8 cm long, enclosed by 6-7 close, glabrous to microscopically scabrous lepanthiform sheaths. **Leaf** more or less brownish, erect in relationship to the stem, fleshy or thickly coriaceous, ovate, subacute, 4-5 cm long, 2.5-3.3 cm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively flowered raceme up to 5 mm long, borne on top of the leaf by a filiform peduncle 12-13 mm long; floral bracts pubescent, 2.5 mm long; pedicels 2 mm long; ovary 1.5 mm long; **sepals** translucent yellow, glabrous, ovate, acute, margins smooth, the dorsal sepal 5.5 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.75 mm, the lateral sepals diverging, 4.75 mm long, 2 mm wide, 2-veined, connate 1 mm; **petals** orange, red centrally, glabrous or cellular, transversely narrowly oblong with obtuse ends, 1 mm long, 6.5 mm wide, the lobes about equal in length, the upper lobe suberect in the natural position; **lip** red, glabrous, the blades flat, narrowly elliptical, 2.5 mm long, the ends acute, the connectives short, cuneate, originating with the base of the column, the sinus narrow with a minute, oblong, pubescent appendix; **column** slender, 2.5 mm long, the anther and stigma apical.

**Antioquia:** Frontino, El Plateado, alt. 2200 m, collected by E. Valencia, 12 May 1984, flowered in cultivation at Colomborquídeas, El Retiro, 20 May 1984, *R. Escobar 3185A* (Holotype: MO), C. Luer illustr. 10390; Pabón, epiphytic in forest remnant along the road to Santa Ana, alt. 2050 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar, L. Moreno de Posada, G. Arteaga, B. & F. López 17675* (MO).

This species is characterized by the congested inflorescence borne on top of a thick, brownish leaf. The sepals are translucent and acute; the narrow, transverse petals are suberect; and the blades of the lip are narrowly elliptical, flat, and

glabrous. The similar though somewhat smaller *Lepanthes roezliana* is distinguished by a lip with thick, pubescent blades that expose most of the large, protruding, cylindrical column.

**Lepanthes vellicata** Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 61(3): 177, 1996.

Ety.: From the Latin *vellicatus*, "pinched," referring to the appearance of the deflexed base of the blade of the leaf.

**Plant** medium in size, epiphytic, caespitose; roots numerous, slender. Ramicauls stout, erect, 5-15 cm long, enclosed by 8-15 ciliate lepanthiform sheaths. **Leaf** erect, thinly coriaceous, elliptical, acute, the blade deflexed above the base, 5-8 cm long, 1.5-2.5 cm wide, the base cuneate into a petiole 2-2.5 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 15 mm long, borne behind the leaf by a filiform peduncle 20-25 mm long; floral bracts 2-2.5 mm long, ciliate; pedicels 2-2.5 mm long; ovary 1.5 mm long; **sepals** yellow-white, glabrous, ovate, acute, margins ciliate, the dorsal sepal 5-8 mm long, 3.75 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals oblique, diverging widely, 5-8 mm long, 2.75 mm wide, 2-veined, connate 2 mm; **petals** orange with a red border, or green with a purple border, minutely pubescent, transversely bilobed, 1.25 mm long, 3.5 mm wide, the upper lobe subcircular, the lower lobe obliquely broadly triangular, obtuse; **lip** white, suffused with rose below the middle, thick, bilobed, the lobes broadly rounded, embracing the column, 1.8 mm long, the body fleshy, connate to the base of the column, the sinus protuberant with a small, deflexed, ovoid, pubescent appendix; **column** 1.5 mm long, the anther dorsal, the stigma apical.

**Chocó:** El Carmen, Carmen de Atrato, road to Guaduas, alt. 2000 m, collected by E. Valencia, November 1990, flowered in cultivation at Colomborquídeas, 5-9 May 1993, *C. Luer 16735* (MO).

Also Ecuador (Esmeraldas, Holotype, *Luer et al. 12419*: MO).

This species is similar to the Panamanian *Lepanthes pachyglossa* and the western Colombian *L. troglodytes*. All three are usually found at relatively low altitudes and share a leaf with deflexed sides of the base, imparting a pinched appearance. *Lepanthes vellicata* differs by having ciliate sepals; the sepals of the others are smooth-margined.

**Lepanthes venusta** Luer & R. Escobar, Orquideología 19(2): 120, 1994.

Ety.: From the Latin *venustus*, "beautiful," in reference to a flowering specimen.

Syn.: *Lepanthes arethusa* Luer & R. Escobar, Orquideología 21(2): 135-137, 1999.

Ety.: Named for Arethusa, the beautiful mythological wood nymph.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1.5-6.5 cm long, enclosed by 5-9 microscopically ciliate lepanthiform sheaths with acuminate apices. **Leaf** suberect to erect, purple or rose-gray to green, coriaceous, ovate, subacute to acute, 13-30 mm long, 8-18 mm wide, the base rounded or broadly cuneate, contracted into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 2 cm long, borne behind the leaf by a filiform peduncle 3-15 mm long; floral bracts slightly muriculate, 1 mm long; pedicels 1.5 mm long; ovary 1.5-2 mm long; **sepals** microscopically cellular-glandular, subcarinate, margins denticulate, the dorsal sepal dull yellow, often suffused with purple, broadly ovate, subacute, acuminate into a subulate apex, 7 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals yellow or purple with darker purple on the inner halves, broadly ovate, oblique, diverging widely, 6.5-8.8 mm long including the caudae, 2.75-3.3 mm wide, 2-veined, connate 2 mm, the apices subacute, abruptly contracted into slender caudae 2-3 mm long; **petals** bright orange, microscopically pubescent, transversely bilobed, convex, 1.5 mm long, 3.5-4 mm wide, 1-veined, the lobes opposite, subtriangular to ovate, obtuse, oblique, the upper lobe larger; **lip** bright orange to rose-purple, bilaminate, the blades thick, convex, microscopically pubescent, oblong with rounded ends, 1.5-2 mm long, the connectives short, broadly cuneate, the body narrow, connate to the base of the column, the sinus acute with the appendix small, triangular, pubescent; **column** 1-2 mm long, the clinandrium large with the anther apical and the stigma ventral.

**Risaralda:** above Pueblo Rico, epiphytic in cloud forest below the TV antenna, alt. 2400 m, 14 May 1993, *C. Luer, J. Luer, A. de Wilde & J. Gómez 16839* (Holotype: MO).

**Antioquia:** epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar, L. Posada, B. López, F. López & G. Arteaga 17633* (holotype of *L. arethusa*: MO), *17657* (MO); Mun. Sonsón, Tres Cruces, alt. 2750 m, 30 Apr. 1983, *C. Luer, R. Escobar, et al. 8894* (SEL); near the pass between Urrao and Carmen de Atrato, alt. 2700 m, collected by R. Escobar, W. Teague, et al. 12 December 1994, flowered in cultivation at Colomborquídeas, 23 May 1995, *C. Luer 17528* (MO).

This beautiful little species is apparently endemic in the Western Cordillera. It is distinguished by small, purple or rose-gray to green, subacute leaves; and a shorter inflorescence bearing relatively large, colorful, showy flowers. The broad sepals are finely toothed, with the dorsal sepal acuminate and the laterals contracted into slender caudae; the bright orange, winglike petals are unequally bilobed with the upper lobe larger; and the blades of the lip are oblong with a narrow body and a small, triangular appendix with long, apical cilia. Although all these features are seen in other species, it is their unique combination into this particularly pretty plant that seems specific.

## **Lepanthes viahoënsis** Luer & R. Escobar, Orquideología 20(3): 311-313, 1997.

Ety.: Named for the region around Río Viao where the species was discovered.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 25-35 mm long, enclosed by 6-7 microscopically ciliate lepanthiform sheaths with oblique ostia. **Leaf** erect, thickly coriaceous, very narrowly ovate, acute, 28-32 mm long, 5 mm wide, the cuneate base contracted into a petiole 2 mm long. **Inflorescence** a distichous, congested, successively many-flowered raceme up to 10 mm long, borne behind the leaf by a filiform peduncle 4-6 mm long; floral bracts muriculate, 0.5 mm long; pedicels 0.75-1 mm long; ovary 1 mm long; **sepals** yellow-green, glabrous, membranous, 3-veined, carinate, reflexed, margins smooth, the dorsal sepal ovate, acute, 2.5 mm long, 1.25 mm wide, barely connate to the lateral sepals, the lateral sepals obovate, oblique, diverging, obtuse, shortly acuminate, 2.25 mm long, 1.2 mm wide, barely connate basally; **petals** yellow-orange, microscopically pubescent, transversely bilobed, 0.75 mm long, 2.25 mm wide, the upper lobe erect, obliquely triangular, narrowly rounded at the apex, the lower lobe oblong, shorter, oblique at the apex; **lip** purple, microscopically ciliate, subcordate, with the apex broadly rounded, shortly incised, with a microscopic lobule in the sinus, with the basal lobes embracing the column, 1 mm long, 1.2 mm wide, connate to the base of the column; **column** stout, 0.75 mm long, the anther and stigma apical.

**Antioquia:** Cocorná, Río Viao, alt. ca. 2000 m, collected by Jorge López, flowered in cultivation at Colomborquídeas, 3 June 1995, *C. Luer 17719* (Holotype: MO).

This species, apparently endemic in the Central Cordillera of Colombia, is similar to *Lepanthes petalopteryx* from the Western Cordillera. Both species are characterized by narrowly ovate leaves longer than the congested, distichous racemes bearing the small flowers. The sepals of *L. viahoënsis* are smooth-margined, the laterals three-veined; those of *L. petalopteryx* are minutely denticulate and two-veined. The petals of *L. petalopteryx* are most distinctive, with obliquely truncate upper and lower lobes. Except for that of *L. viahoënsis* being much smaller, the broadly cordate lips of the two species are the same.

## **Lepanthes vibrissa** Luer & Hirtz, Lindleyana 2(3): 155, 1987.

Ety.: From the Latin *vibrissa*, "a whisker," referring to the long, pointed lobes of the petals.

**Plant** large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 15-20 cm long, enclosed by 12-14 long-ciliate lepanthiform sheaths with dilated ostia. **Leaf** erect, thinly coriaceous, ovate, acute, acuminate, 9-10.5 cm long, 4.5-5 cm wide, the rounded base contracted into a petiole 3 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 4 cm long, borne behind the leaf by a slender peduncle 3-4 cm long; floral bracts 2 mm long; pedicels 1.5 mm long; ovary 2 mm

long; **sepals** yellow, glabrous, carinate, ovate, acute, acuminate, margins minutely denticulate, the dorsal sepal 9 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals oblique, diverging, 9 mm long, 3 mm wide, 2-veined, connate 3 mm; **petals** red-purple, microscopically pubescent, transversely bilobed, 1 mm long, 7 mm wide, the lobes obliquely and narrowly triangular, acute, the upper lobe much longer; **lip** red-purple, bilaminate, the blades shortly pubescent, subovate, convex, obtuse, 1.9 mm long, the connectives cuneate, connate to the base of the column, the sinus obtuse with an oblong, ciliate appendix with a bilobulate apex; **column** 2 mm long, the anther apical, the stigma ventral.

**Antioquia:** Urrao, Parque Nacional Natural "Las Orquídeas," Sector Calles, margen derecha del Río Calles, alt. 1320-1390 m, 24 Mar. 1988, *A. Cogollo, J. G. Ramirez & O. Alvarez 2526* (MO); same area, alt. 1240 m, 29 May 1988, *A. Cogollo & J. G. Ramírez 3052* (MO); same area, alt. 1250-1375 m, 31 May 1988, *A. Cogollo & J. G. Ramírez 3116* (MO); same area, alt. 1390-1420 m, 12 Feb. 1989, *A. Cogollo, D. Cárdenas & O. Alvarez 3919* (MO); Alto de Cuevas, E. Valencia, December 1990, flowered in cultivation at Colomborquídeas, 16-19 May 1993, *C. Luer 16888* (MO); epiphytic in cloud forest north of the Urrao-Carmen de Atrato pass, alt. 2700 m, 30 May 1995, *C. Luer et al. 17666* (MO).

Also Ecuador (Napo, Holotype, *Luer et al. 11263*: MO).

Among several species with petals with long-pointed lobes, the upper lobe much longer than the lower lobe, *Lepanthes vibrissa* differs in its large size and congested racemes. The relatively large, ovate sepals are minutely denticulate with acuminate apices. The minutely pubescent blades of the lip are longitudinally convex. The appendix is pubescent and minutely bilobulate at the apex.

**Lepanthes vieirae** Luer & R. Escobar, Orquideología 17(3): 228-231, 1988.

Ety.: Named in honor of Don Luis Carlos Vieira of Medellín, Colombia, discoverer of this species.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-15 mm long, enclosed by 4-5 scabrous lepanthiform sheaths, shortly ciliate on the margins of the ostia. **Leaf** erect, coriaceous, ovate, acute, 12-17 mm long, 7-11 mm wide, the broadly cuneate base contracted into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 3 mm long; floral bracts scabrous, 0.5 mm long; pedicels 0.5 mm long; ovary 0.75 mm long; **sepals** dull red-purple, glabrous, ovate, acute, carinate, margins ciliate, the dorsal sepal 3.5 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals diverging, 3 mm long, 1.5 mm wide, connate 1 mm, 1-veined; **petals** red-purple, yellow toward the base, pubescent, narrowly transversely elliptical, 0.5 mm long, 3 mm wide, 3-veined, the lobes triangular, acute, the upper lobe 3 times longer than the lower lobe; **lip** red-purple, bilaminate, pubescent, the blades elliptical, obtuse, 0.9 mm long, the connectives broadly cuneate, the broad body connate to the base of the column-foot, the sinus obtuse with a pedunculate, pubescent appendix slightly bifid at the apex; **column** 1 mm long, the anther apical, the stigma ventral.

**Chocó:** epiphytic in forest, Bahia Solano, alt. 200 m, Dec. 1982, collected and cultivated by L. C. Vieira, flowered in cultivation, 21 May 1984, *C. Luer 10393* (Holotype: MO); "planta epifita del estrato arboreo más alto en ramas muy delgadas relativamente frecuente 50 a 100 mts.," July 1988, *G. Misas Urreta 75a* (HPUJ).

This little species is one of a very few that grow in the hot lowlands of Colombia. It is recognized by its small size; ciliate sepals, the laterals with only one vein; proportionally long, pointed, pubescent petals; and ovate, pubescent blades of the lip with a pedunculated, pubescent appendix. The often equally minute *Lepanthes pinnatula* from much higher elevations is similar, but the flowers differ with sepals with short-acuminate apices and a lip with decurved bases.

**Lepanthes volvox** Luer & R. Escobar, Amer. Orchid Soc. Bull. 53(5): 481, 1984.

Ety.: From the Latin *volvox,* "a caterpillar," in allusion to the appearance of the lobes of the petals.

**Plant** medium to large in size, epiphytic, caespitose; roots relatively coarse. Ramicauls moderately stout, erect, 12-17 cm long, enclosed by 13-14 ciliate lepanthiform sheaths. **Leaf** erect, thinly

coriaceous, multiveined, the veins ciliate beneath, ovate, acute, acuminate, 7-9 cm long, 2.5-2.8 cm wide, the base rounded, abruptly contracted into a petiole 5-6 mm long. **Inflorescence** a congested, secund, successively flowered raceme up to 5 mm long or longer, borne behind the leaf by a filiform peduncle 3-4 cm long; floral bracts 2 mm long; pedicels 1 mm long; ovary 1.5 mm long; **sepals** translucent light rose, glabrous, margins smooth, the dorsal sepal triangular, acute, 8 mm long, 4 mm wide, 3-veined, connate to the lateral sepals for 1.5 mm, the lateral sepals ovate, acute, diverging slightly, shortly acuminate, longitudinally concave centrally, connate 3 mm, 7.5 mm long, 6 mm wide together, each 2-veined; **petals** yellow, transversely bilobed, pubescent, 1.5 mm long, 6.5 mm wide, the lobes subequal, obliquely ovate basally with slender, attenuated apices; **lip** red-orange, the blades subcircular, 2.75 mm long, glabrous, the apices abruptly acuminate, the bases rounded, the connectives broadly oblong to form a broad, rounded body, connected to the base of the column, the rounded sinus with a small, sigmoid, pubescent, oscillating appendix bilobed at the apex; **column** 2 mm long, the anther dorsal, the stigma ventral.

**Antioquia:** Jardín, Alto de Ventanas, alt. 2800 m, 26 May 1983, collector unknown, flowered in cultivation at Colomborquídeas, El Retiro, 13 Jan. 1984, *R. Escobar 3194* (Holotype: MO; Isotypes: JAUM, SEL), C. Luer illustr. 9492.

This large species is characterized by the congested inflorescence shorter than the leaf that is ciliate along the veins beneath. The lobes of each petal are long, slender, and pubescent. The rounded blades of the lip have narrowly acuminate apices, and the appendix is a small, oscillating organ. The pubescent petals with an everted lower lobe; and the lip with blades with broadly rounded, concave bases and acute apices are reminiscent of *Lepanthes uncifera*. The flowers of *L. uncifera* are larger and borne in a very congested, distichous raceme, with petals with the upper lobe obliquely, obtusely triangular.

**Lepanthes wageneri** Rchb. f., Bonplandia 3: 70, 1855.

Ety.: Named in honor of the traveler Hermann Wagener who first collected this species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 10-30 mm long, enclosed by 4-8 minutely ciliate lepanthiform sheaths. **Leaf** erect, suffused with purple, thickly coriaceous, elliptical, subacute to obtuse, 15-20 mm long, 8-13 mm wide, the base broadly cuneate into a petiole 1 mm long. **Inflorescence** a congested, successively several-flowered raceme up to 3 mm long, borne behind the leaf by a slender peduncle 3 mm long; floral bracts 1-1.25 mm long; pedicels 1-1.25 mm long; ovary 1-1.5 mm long; **sepals** yellow, occasionally nearly white, variously suffused with red, glabrous, margins smooth, the dorsal sepal ovate to obovate, obtuse, sometimes shortly acuminate, 3.5-5 mm long, 1.5-2.5 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals ovate, oblique, acute to subacute, sometimes shortly acuminate, apices approximate to diverging, 2.5-4.5 mm long, 1.5-2 mm wide, 2-veined, connate about 0.5 mm; **petals** yellow or orange, variously suffused with red, minutely pubescent, transversely bilobed, 1-1.3 mm long, 2.25-4 mm wide, the upper lobe ovate-triangular to broadly oblong, obtuse, sometimes acute, the lower lobe usually similar; **lip** orange to red, cellular-pubescent, bilaminate, the blades more or less oblong, longitudinally concave, 1.5 mm long, with everted or revolute, truncate apices and rounded bases, the connectives posterior, obliquely cuneate, the body narrow but with an external, cymbiform appendix that protrudes forward beyond the sinus; the body connate to the base of the column; **column** 1.5 mm long, the anther apical, the stigma ventral.

**Norte de Santander:** Aspasica, Ocaña, April 1854, *H. Wagener s.n.* (Holotype: W); epiphytic in cloud forest, Alto de Santa Inéz, alt. 2100-2250 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10320, 10321, 10330, 10344* (MO).

**Antioquia:** epiphytic in forest above the Miraflores Dam northeast of Santa Rosa de Osos, alt. 2050 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia 11373* (MO); epiphytic in forest remnant about 10 km north of Santa Rosa de Osos, alt. 2650 m, 14 March 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14134* (MO); La Unión, epiphytic in trees along a stream 5 km west of Mesopotamia, alt. 2400 m, 8 Apr. 1988, *C. Luer, J. Luer & R. Escobar 13073, 13078* (MO); epiphytic in forest between Barbossa and Concepción, alt. 2380 m, 10 Apr. 1988, *C. Luer 13175A* (MO); Retiro, epiphytic in forest above Colomborquídeas, alt. 2400 m, collected by W. Teague, 17 Apr. 1988, *C. Luer 13220* (MO); Mun. El Carmen, above San Lorenzo, alt. 2500 m, 21 March 1989, *C. Luer, J. Luer & W. Teague 14340* (MO).

**Santander:** epiphytic in cloud forest west of Velez, road to Landazuri, alt. 2150 m, 4-5 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10129* (MO).

**Boyacá:** Chiquinquira, in city park 'Juan Pablo II,' in shrubs, alt. 2600 m, 2 Jan. 1993, *A. de Wilde 4427* (MO).

**Cundinamarca:** "Andes of Bogotá," probably Cundinamarca, alt. unknown, June 1923, *Pring 264* (MO); Guatarita, alt. 2800 m, 2007, collected and flowered in cultivation by Luis Eduardo Álvarez, June 2009, *L. Thoerle 135* (MO).

**Putumayo:** east of San Francisco, alt. 2500-2700 m, 8 June 2009, *L. Thoerle 119* (MO).

Also Ecuador (Napo, Tungurahua, Pastaza, Morona-Santiago, Azuay, Loja, Zamora-Chinchipe), Bolivia (La Paz, Cochabamba), Venezuela (Aragua, Falcon, Mireda, Sucre, Yaracuy).

This species is frequent and locally common in its wide distribution in the Andes from Venezuela into Bolivia. Although it is variable both vegetatively and florally, it is usually easily recognized. The leaves are small, thick, elliptical, and suffused with purple. The inflorescence is short and behind the leaf. The flowers are colorful with various combinations of yellow, orange, red, and purple. The sepals are very shallowly connate, and sometimes shortly acuminate. The petals are very variable in size and shape, in no two populations being the same. The lip, however, is easily recognized by the oblong blades that are longitudinally channeled or concave with the obtuse or truncate apex more or less recurved. The appendix is longitudinal and boat-shaped on the external surface of the body, and extends forward beyond the sinus. It can be recognized from a lateral view when the blade of the lip is lifted.

*Lepanthes dalstroemii* Luer was reduced to synonymy as a vegetatively larger variant of *L. wageneri* (Luer 1996b). Re-examination of these two taxa shows discrete differences that support maintaining both species. *Lepanthes dalstroemii* is very similar to *L. wageneri*, but differs with longer, narrowly elliptical leaves borne by longer ramicauls; flowers with petals oblong with a small marginal angle between the lobes, rather than usually broadly oblong without a marginal angle; and a lip with blades with margins irregular rather than minutely pubescent, and an appendix ligulate rather than triangular.

## **Lepanthes yubarta** E. Calderón, Orquideología 27(2): 200, 2010.

Ety.: From *yubarta*, the local name for the humpback whale, in reference to the curved column and the fluke-like lateral lobes of the lip.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, slender, 3-5 cm long, enclosed by 5-8 microscopically ciliate lepanthiform sheaths. **Leaf** suberect, coriaceous, ovate, acute, more or less acuminate, 1.5-3 cm long, 0.9-1.1 cm wide, contracted below into a petiole 1 mm long. **Inflorescence** a congested, more or less secund, successively many-flowered raceme to 7 mm long, borne before the leaf by a peduncle 5-9 mm long; floral bracts 0.8 mm long; pedicels 2 mm long; ovary 1.5 mm long, subcarinate with the ribs microscopically irregular; **sepals** bright yellow to orange, glabrous, margins smooth, the dorsal sepal ovate, subacute, 4 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for ca. 0.5 mm, the lateral sepals connate 3 mm into a broadly ovate, bifid synsepal, 4 mm long, 4.5 mm wide, each 2-veined, the apices subacute to obtuse, diverging slightly, free for 1 mm; **petals** orange, cellular-pubescent, bilobed, 0.8 mm long, 2.5 mm wide, the lobes similar, more or less oblong, rounded at the ends; **lip** cellular-pubescent, bilaminate, the blades obliquely triangular, antrorse, rounded at the apex, each ca. 0.6 mm long, erect to either side of the column, the body 0.5 mm long and wide, held beneath the column, the appendix minute, pubescent, protruding, oblong, concave; **column** rose, semiterete, curved 180° downward, 1.5 mm long, ca. 0.7 mm wide, 2-winged at the apex, with the anther and the stigma ventral.

**Valle del Cauca:** El Cairo, Serrania de los Paraguas, alt. 1900 m, flowered in cultivation at Reserva Natural El Refugio, Aug. 2010, *E. Calderón 602* (Holotype: HPUJ); Alto de Los Galápagos, below the pass between Valle del Cauca and Chocó, alt. 1900 m, 13 May 1993, *C. Luer et al. 16818* (MO); without collection data, cultivated by Andrea Niessen de Uribe at Orquídeas del Valle, Cali, Nov. 2000, *A. Niessen 038* (MO), C. Luer illustr. 19442.

**Risaralda:** above San José del Palmar, Alto de Galápagos, alt. 2100 m, collected by A. de Wilde, flowered in cultivation at his home above Pereira, 10 May 1993, *C. Luer 16741* (MO).

Also possibly Ecuador: without collecting data, cultivated by Ecuagenera, Gualaceo, Ecuador, 5 Mar. 2001, *C. Luer 19716* (MO).

This species of southern Colombia and perhaps Ecuador resembles *Lepanthes pterygion* from the northern Western Cordillera. The two species share flowers with a terete, decurved column, flanked at the base by the minute, winglike lobes of the lip. The flowers of *L. yubarta* differ with a proportionally broader, less acute dorsal sepal; petals with shorter, obtuse lobes rather than narrowly triangular, acute lobes; and a lip with shorter obtuse blades and a smaller, oblong, concave appendix rather than triangular blades and a ligulate appendix. The ovary of *L. yubarata* is minutely and irregularly ribbed rather than smoothly sulcate.

**Lepanthes zapatae** Luer & R. Escobar, Orquideología 19(2): 121, 1994.

Ety.: Named in honor of M. Zapata who collected this species.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls comparatively stout, erect, 4-7 cm long, enclosed by 7-8 minutely ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 20-27 mm long, 11-14 mm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme, up to 5 mm long, often bearing 2 flowers simultaneously, borne behind the leaf by a filiform peduncle 8-10 mm long; floral bracts muriculate, 1.5 mm long; pedicels 2-2.5 mm long; ovary 2 mm long; **sepals** rose with red along the veins, slightly reflexed, glabrous, margins smooth, the dorsal sepal ovate, acute, 4 mm long, 2.6 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, diverging, acute, 4 mm long, 1.75 mm wide, 2-veined, connate 1 mm; **petals** red, microscopically pubescent, transversely bilobed, convex, 1.25 mm long, 4.25 mm wide, the lobes obscurely ovate-triangular, narrowly obtuse, the apices of the upper lobes overlapping; **lip** red-orange, bilaminate, the blades microscopically pubescent, narrowly oblong, 2 mm long, with the apices narrowed, elongated, recurved, overlapping beneath the column, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse, with the appendix external, minute, ciliate; **column** 1.5 mm long, with the anther and the stigma apical.

**Antioquia:** Hda. El Mono de Frontino, collected by M. Zapata, Dec. 1992, flowered in cultivation at Colomborquídeas, 5 May 1993, *C. Luer 16724* (Holotype: MO).

This little species from the Western Cordillera around Frontino is distinguished by relatively small, elliptical leaves borne by considerably longer ramicauls. The distichous raceme with long pedicels, borne along the back side of the leaf, often bears two flowers, one on either side of the raceme. The sides of the ovate sepals recurve as the sepals slightly reflex. The large petals are convex with apices overlapping as they lie against the sepals. The blades of the lip are oblong, with elongated apices that recurve beneath the column. The connectives are very wide, with the sinus at their junction above the minute, external appendix. The superficially similar *Lepanthes hubeinii* is distinguished by sepals with the dorsal obtuse and broadly ovate, the laterals ovate and connate more than half their length; and a lip with a long, conspicuous, pendent, ciliate appendix.

## DOUBTFUL AND EXCLUDED SPECIES

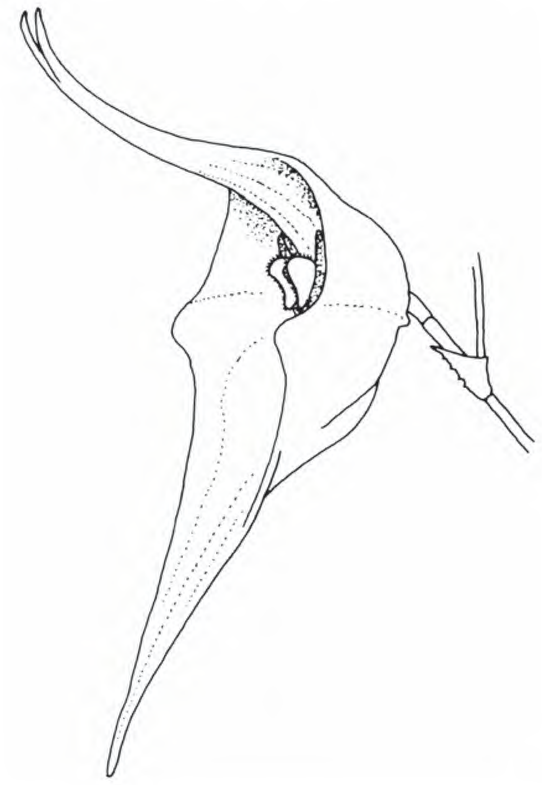
The following species remain poorly understood and are excluded from this treatment:

**Lepanthes antioquiensis** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 95, 1920.
**Lepanthes dolichopus** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 96, 1920.
**Lepanthes lehmannii** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 160, 1924.
**Lepanthes marginata** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 96, 1920.
**Lepanthes nubicola** Rchb. f., Xenia Orchidacea 1: 146, 1856.
**Lepanthes schnitteri** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 160, 1924.
**Lepanthes stenoscleros** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 99, 1920.

Farfán et al. 2003 lists a number of species for which we find no vouchered occurrences in Colombia:

**Lepanthes crista-piscis** Luer & R. Vásquez, Phytologia 54(5): 337. 1983. Endemic to Bolivia.
**Lepanthes pteropogon** Rchb. f., Xenia Orchidacea 1: 146. 1856, seems to be based on a specimen of *L. dunstervilleorum* (*C. Luer 05243,* SEL).
**Lepanthes schizix** Luer, Phytologia 54(5): 370. 1983. Endemic to Ecuador.
**Lepanthes speciosa** Luer & Hirtz, Die Orchidee 43(2): 67. 1992. Endemic to Ecuador.

Foldats (1970) includes Colombia in his distribution for *Lepanthes lindleyana* Oerst. & Rchb. f. Xenia Orchidacea 1: 149, t. 50, 1858, but we find no vouchered occurrences in Colombia.



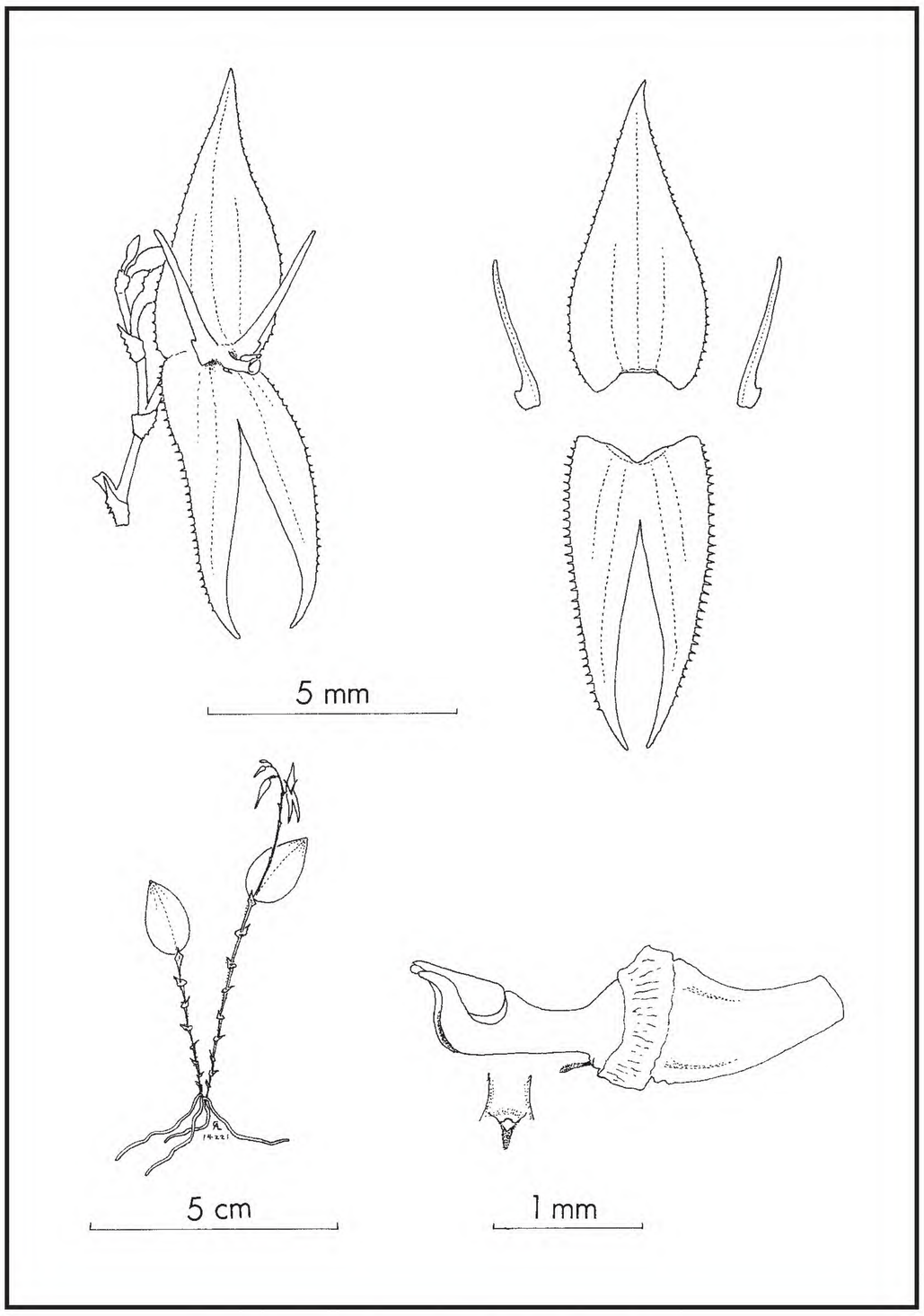



Fig. 1. Lepanthes abortiva

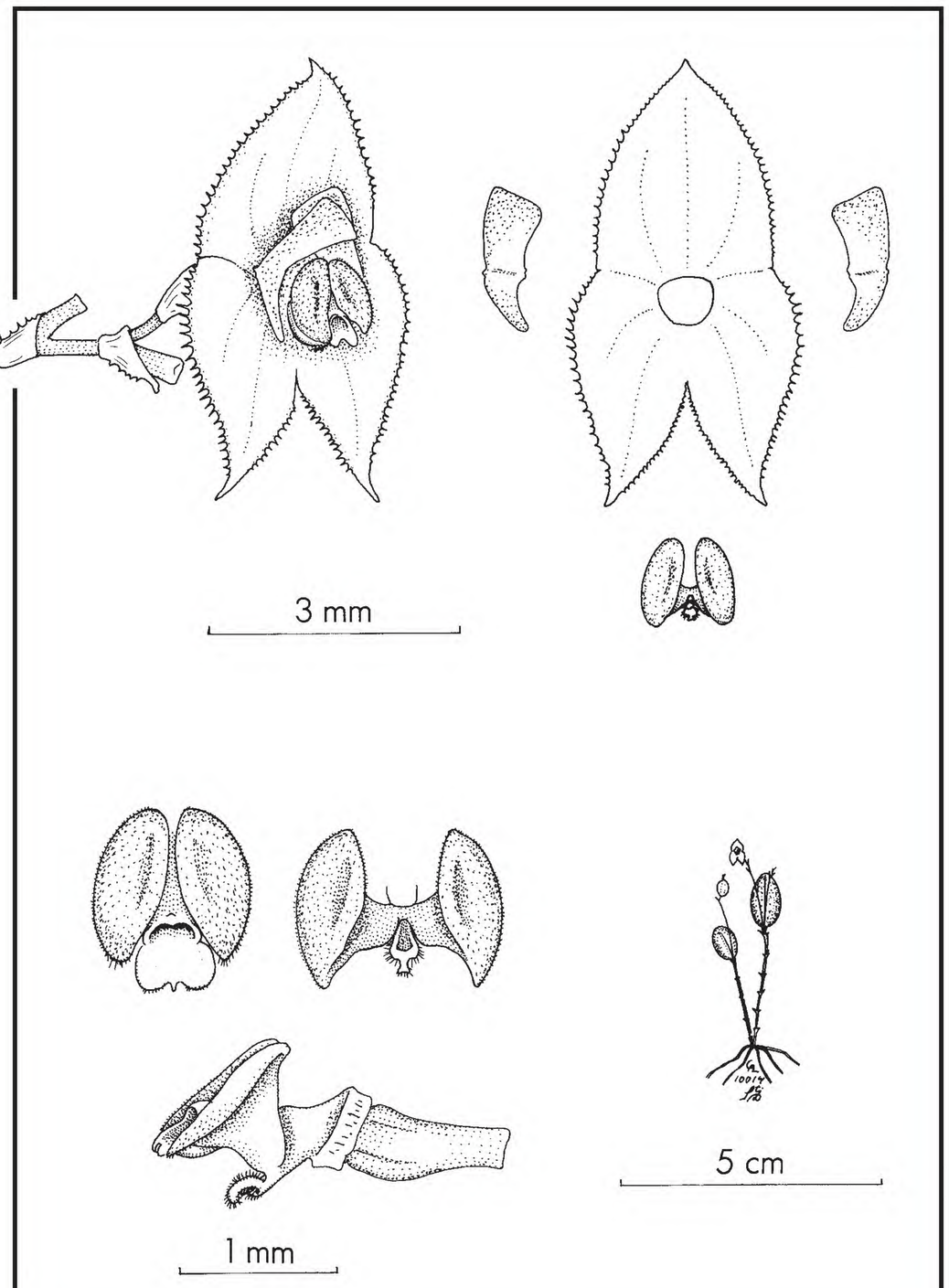



Fig. 2. Lepanthes acarina




Fig. 3. Lepanthes aciculifolia

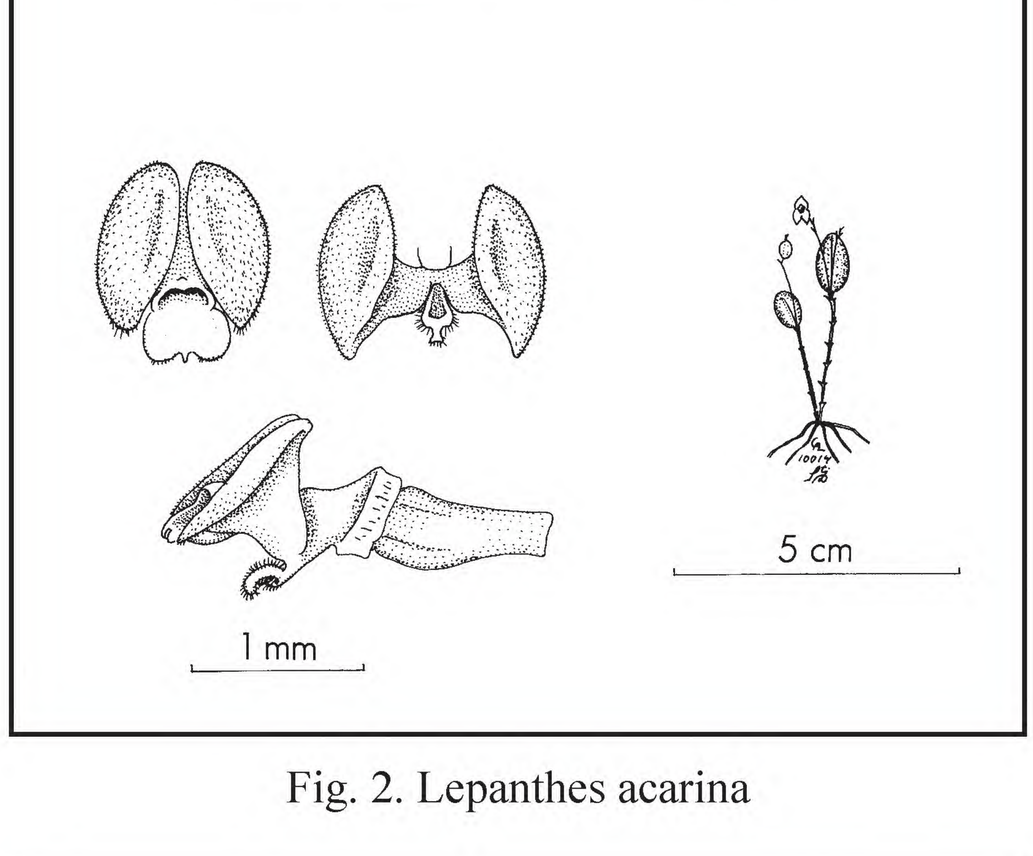



Fig. 4. Lepanthes acrogenia

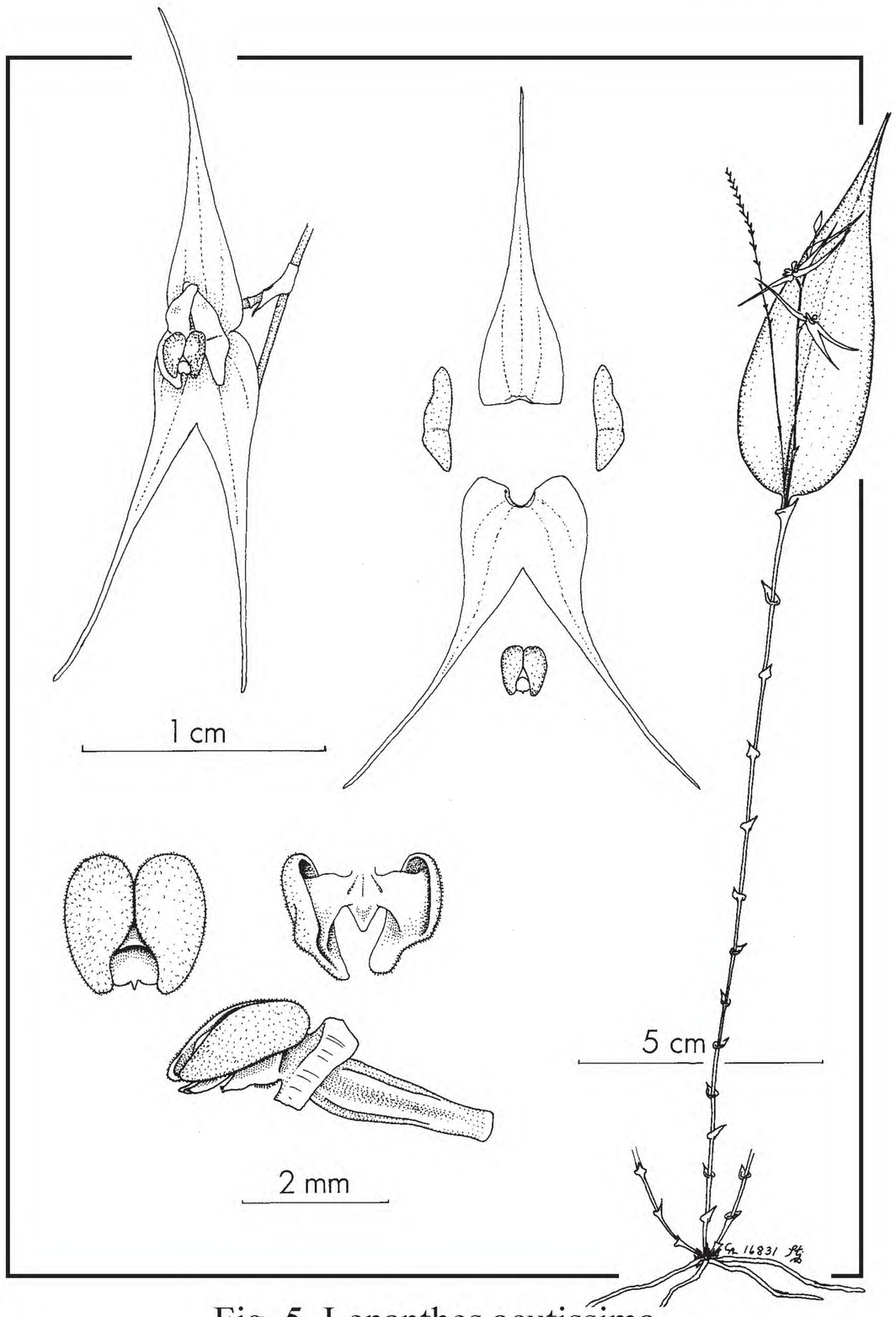



Fig. 5. Lepanthes acutissima

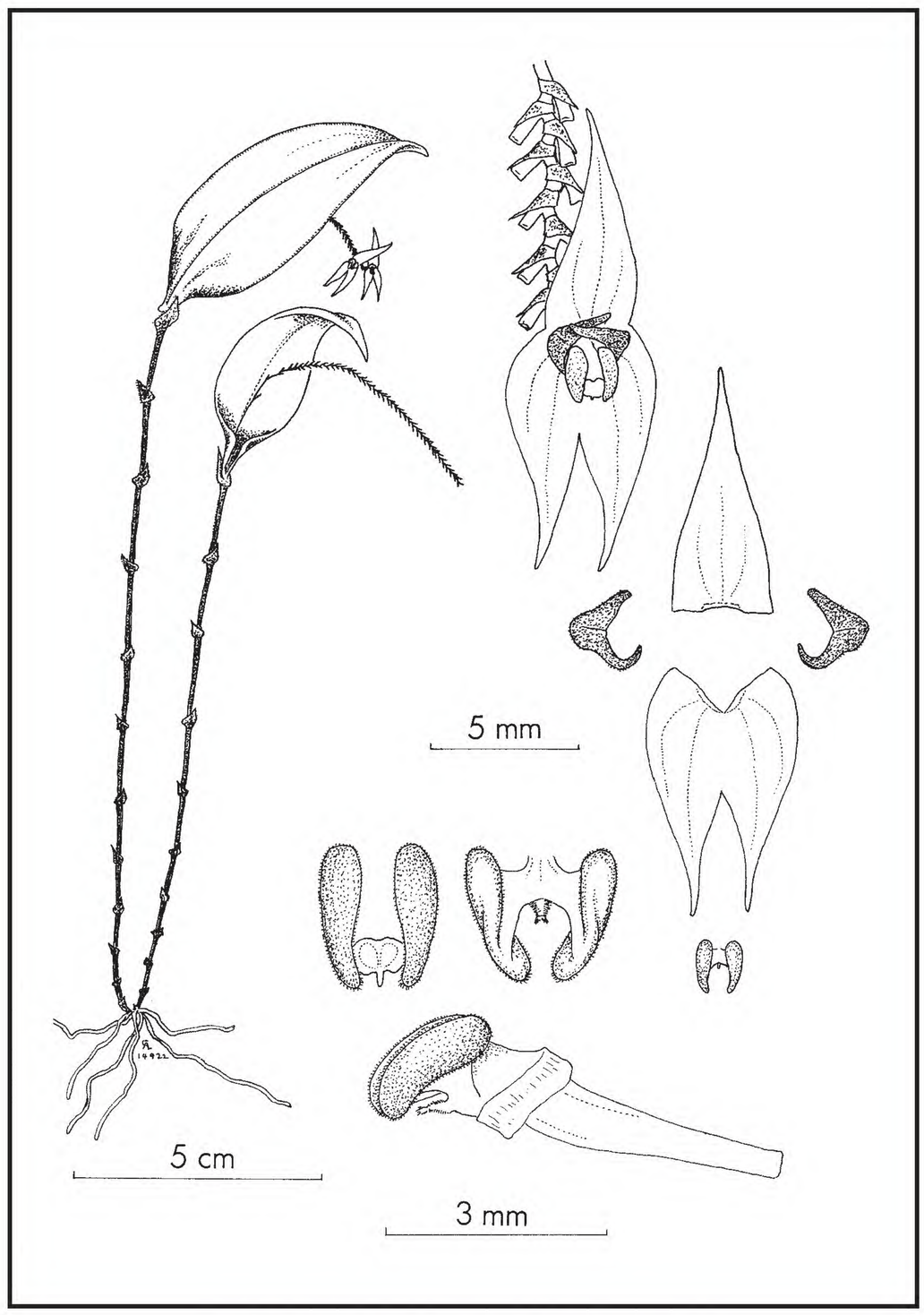



Fig. 6. Lepanthes aduncata

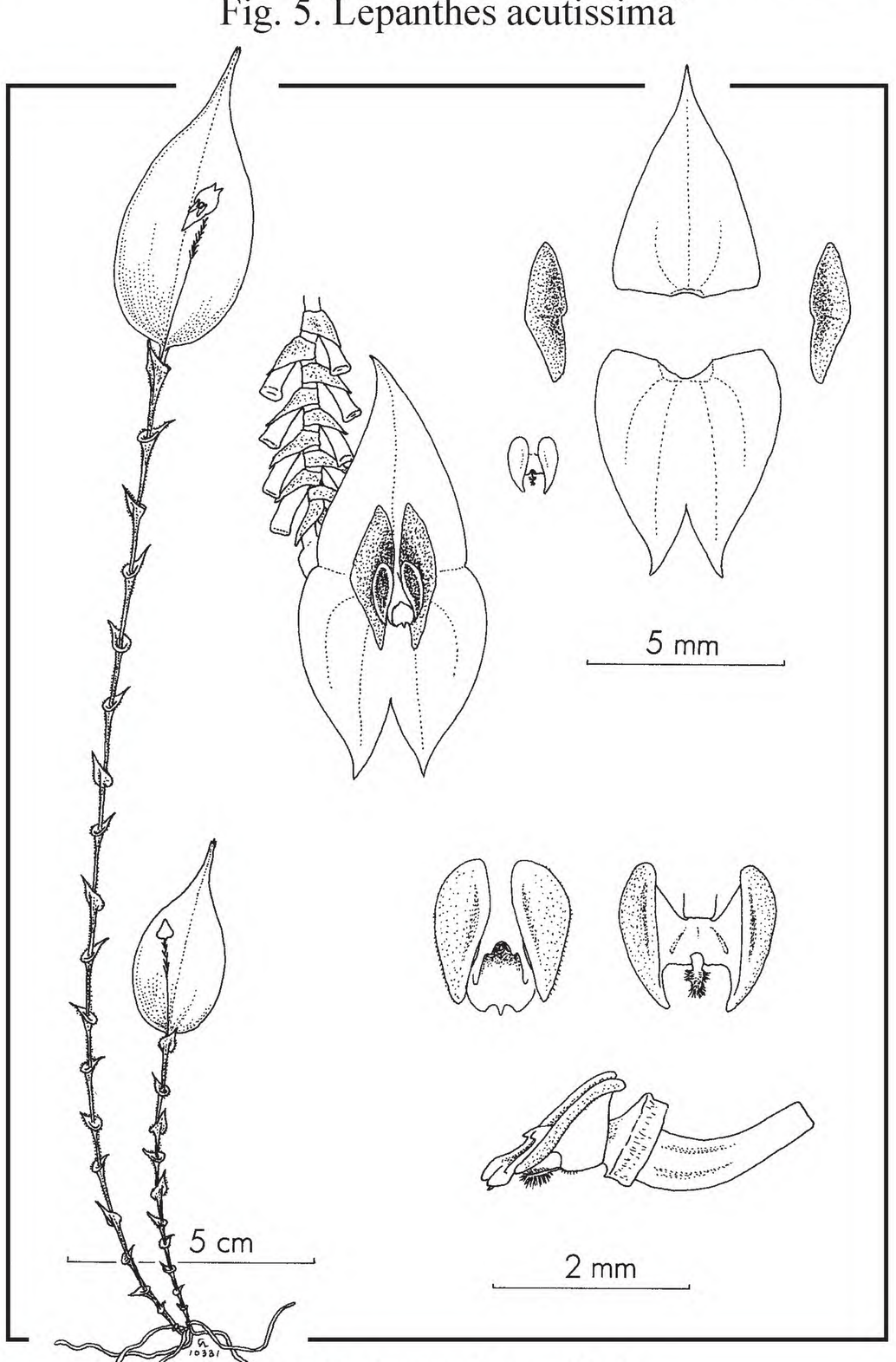



Fig. 7. Lepanthes affinis

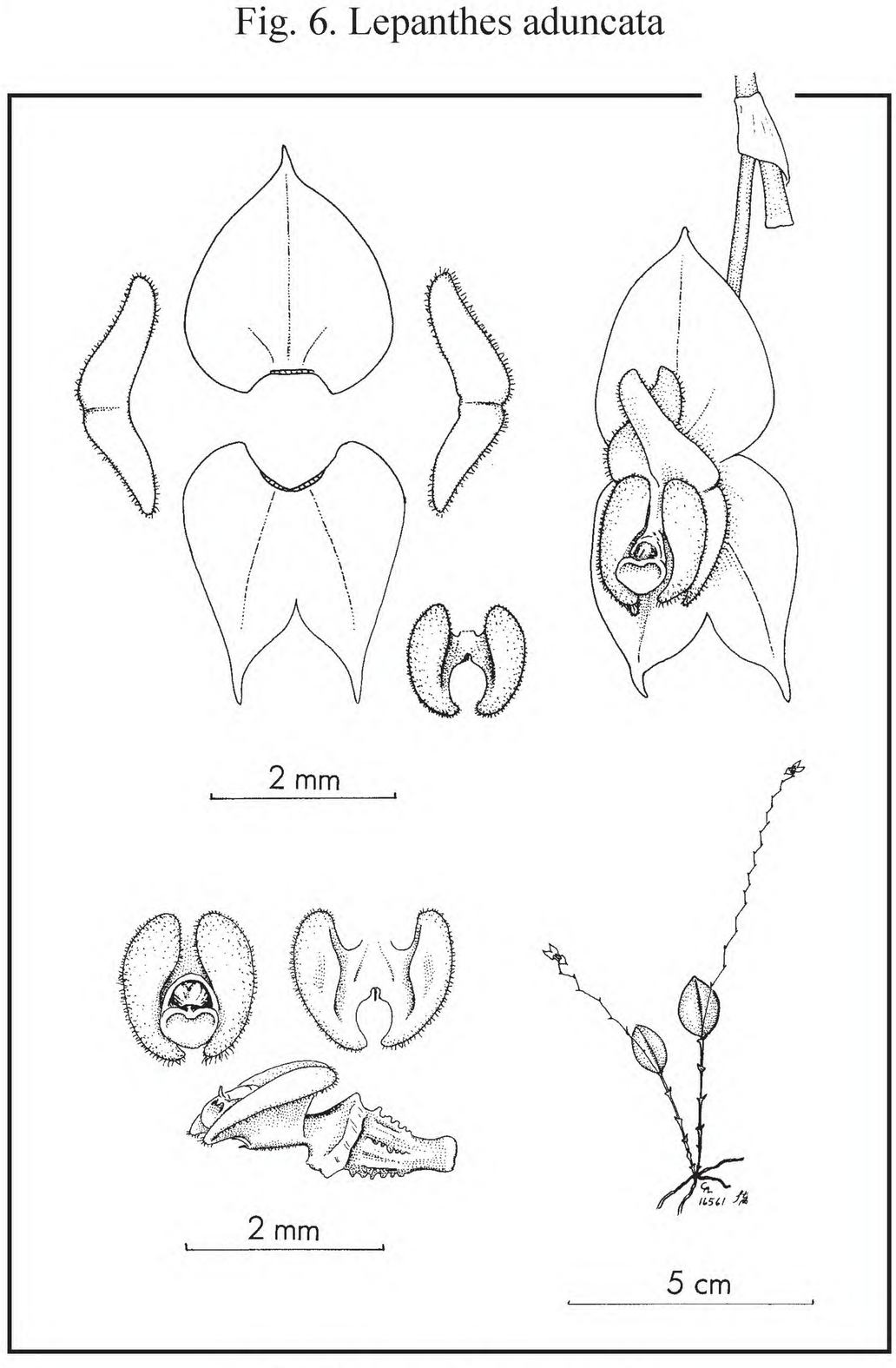



Fig. 8. Lepanthes aggeris

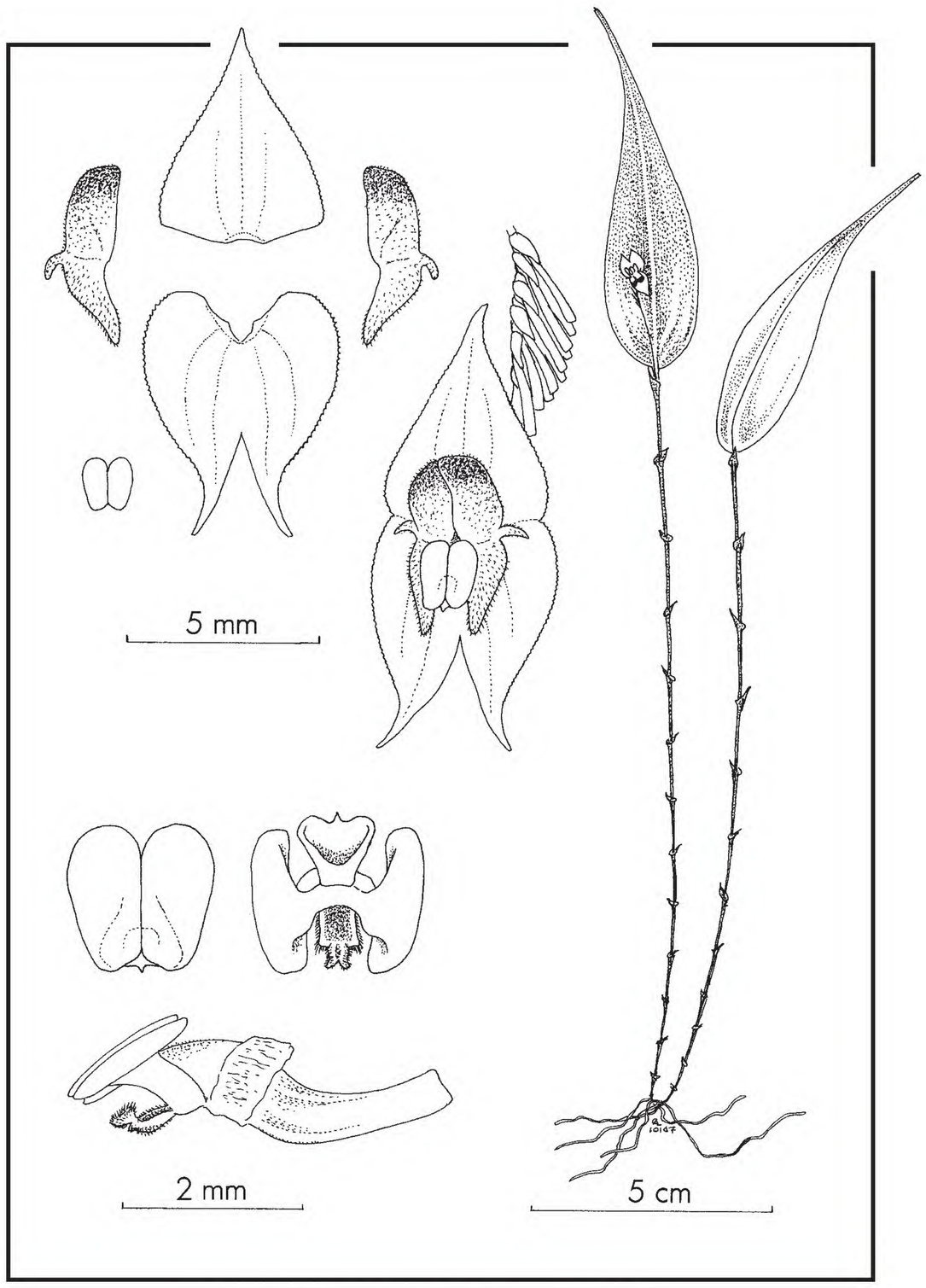



Fig. 9. Lepanthes agglutinata

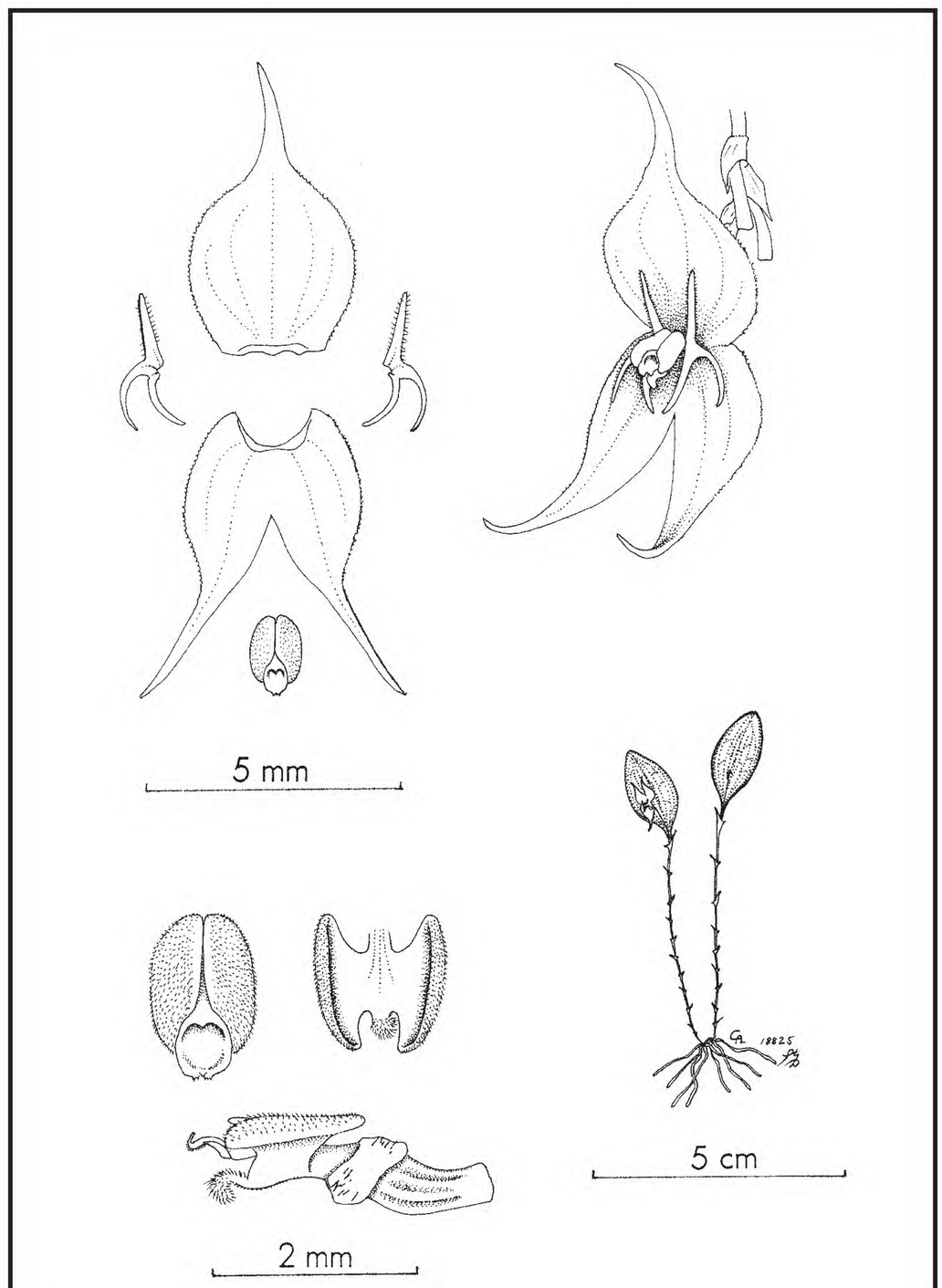
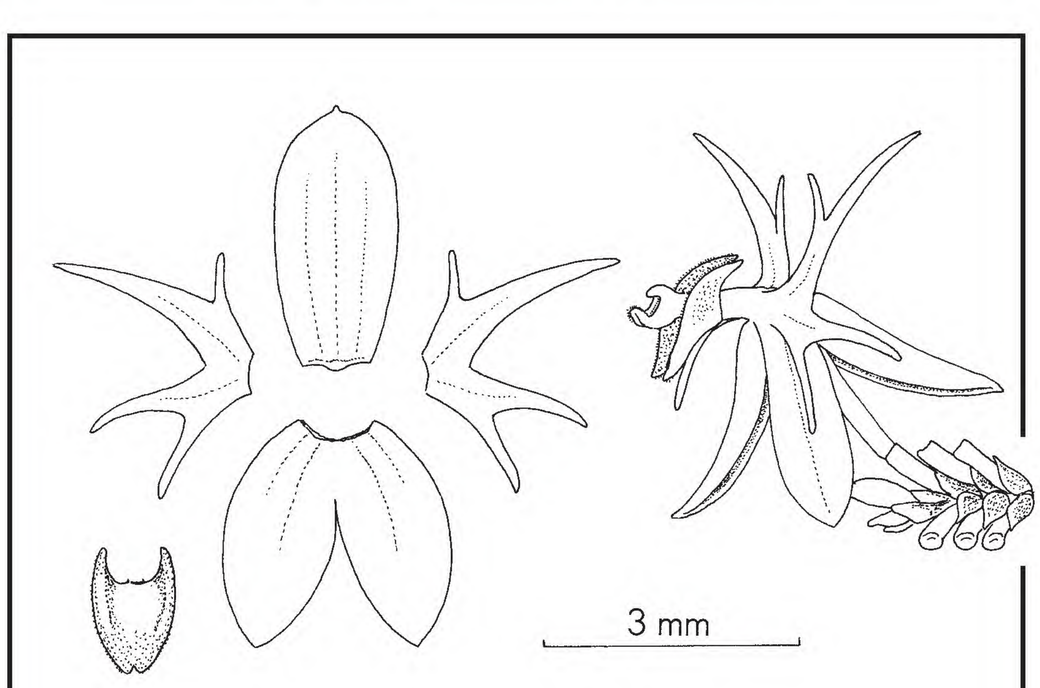



Fig. 10. Lepanthes aguirrei



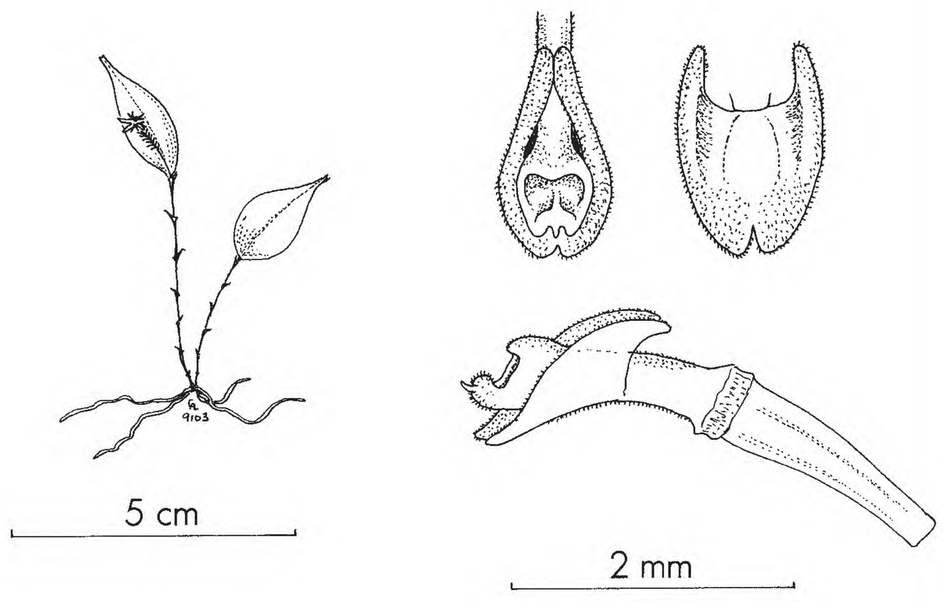




Fig. 11. Lepanthes alcicornis

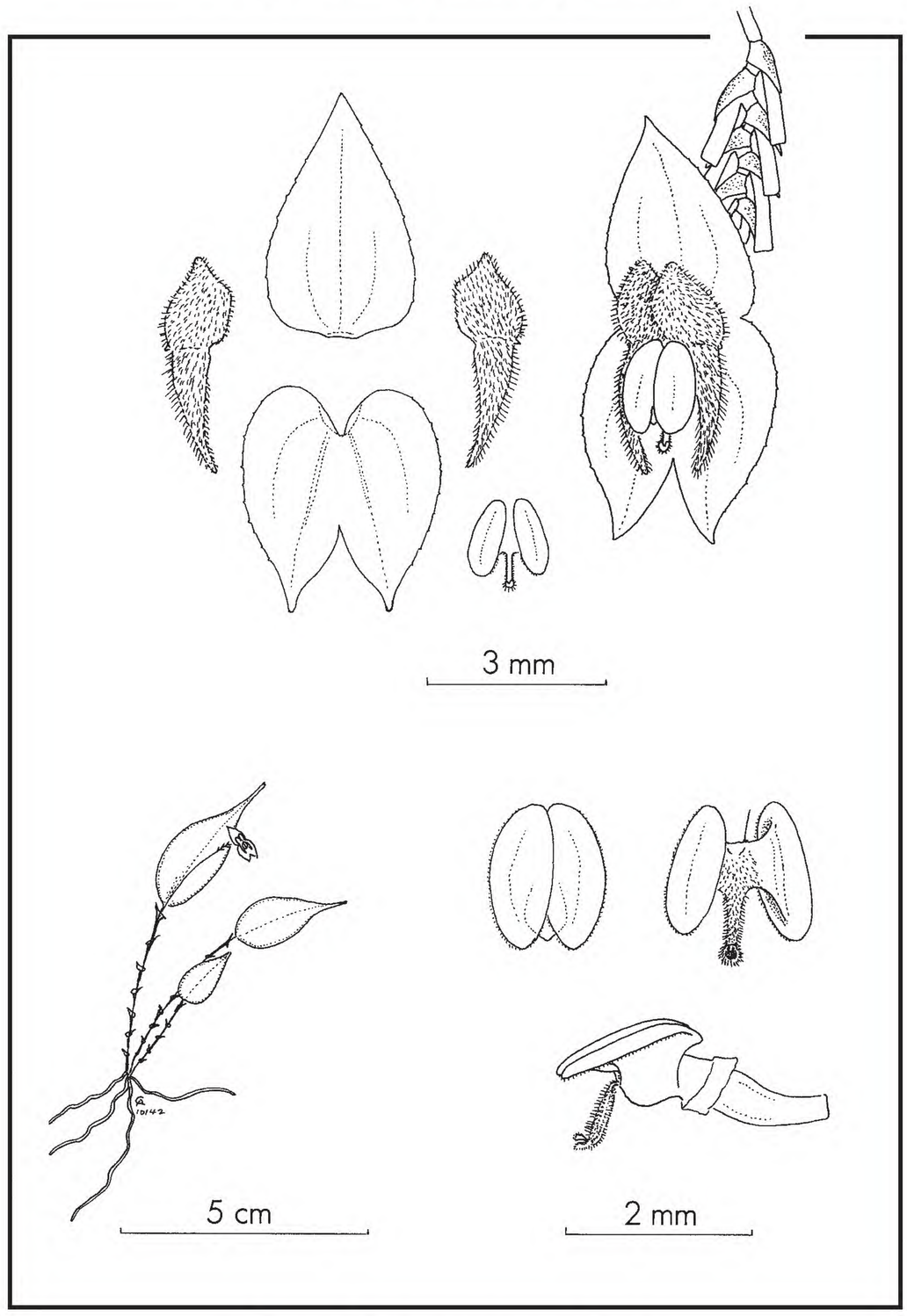



Fig. 12. Lepanthes alkaia

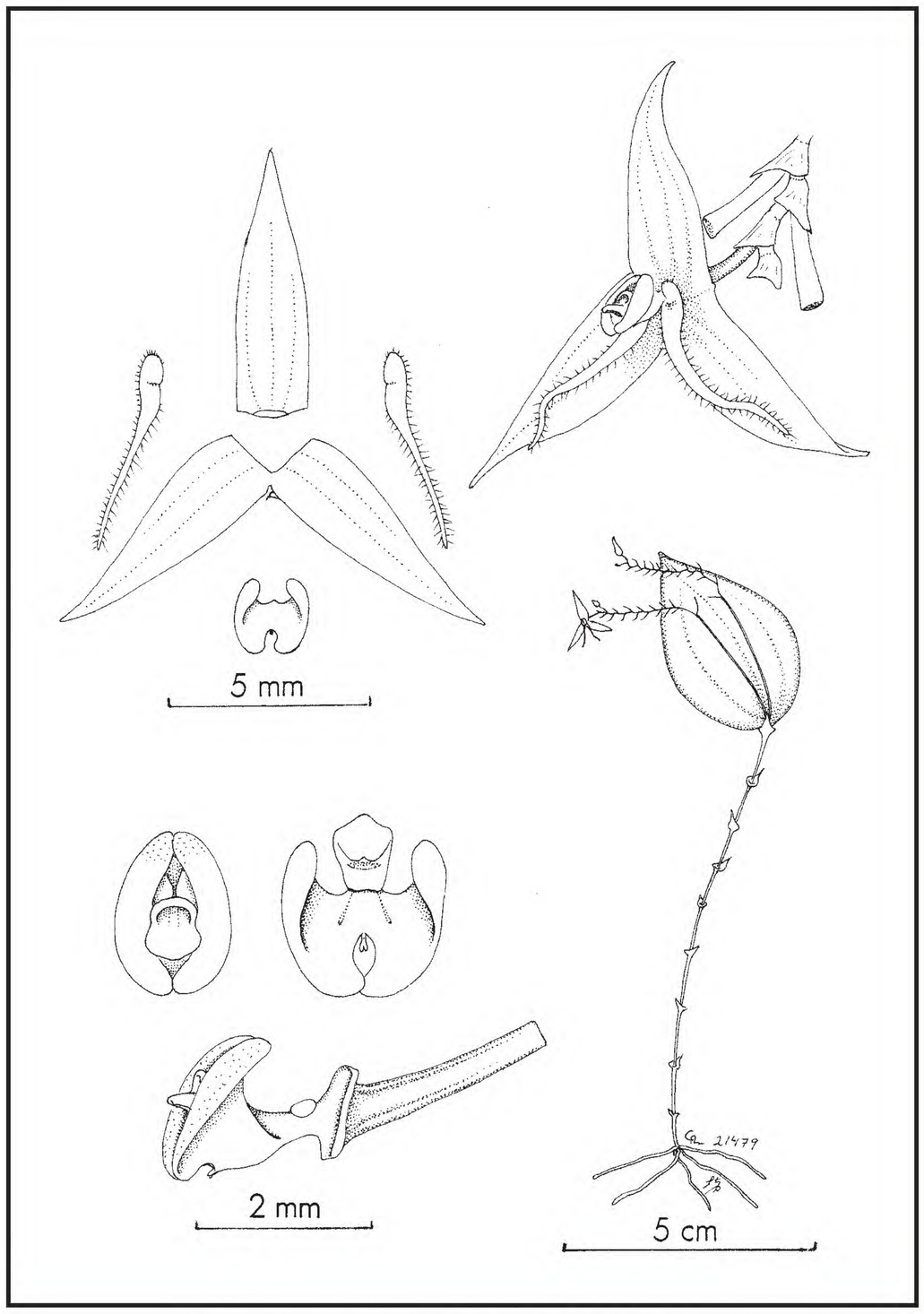



Fig. 13. Lepanthes alvarezii

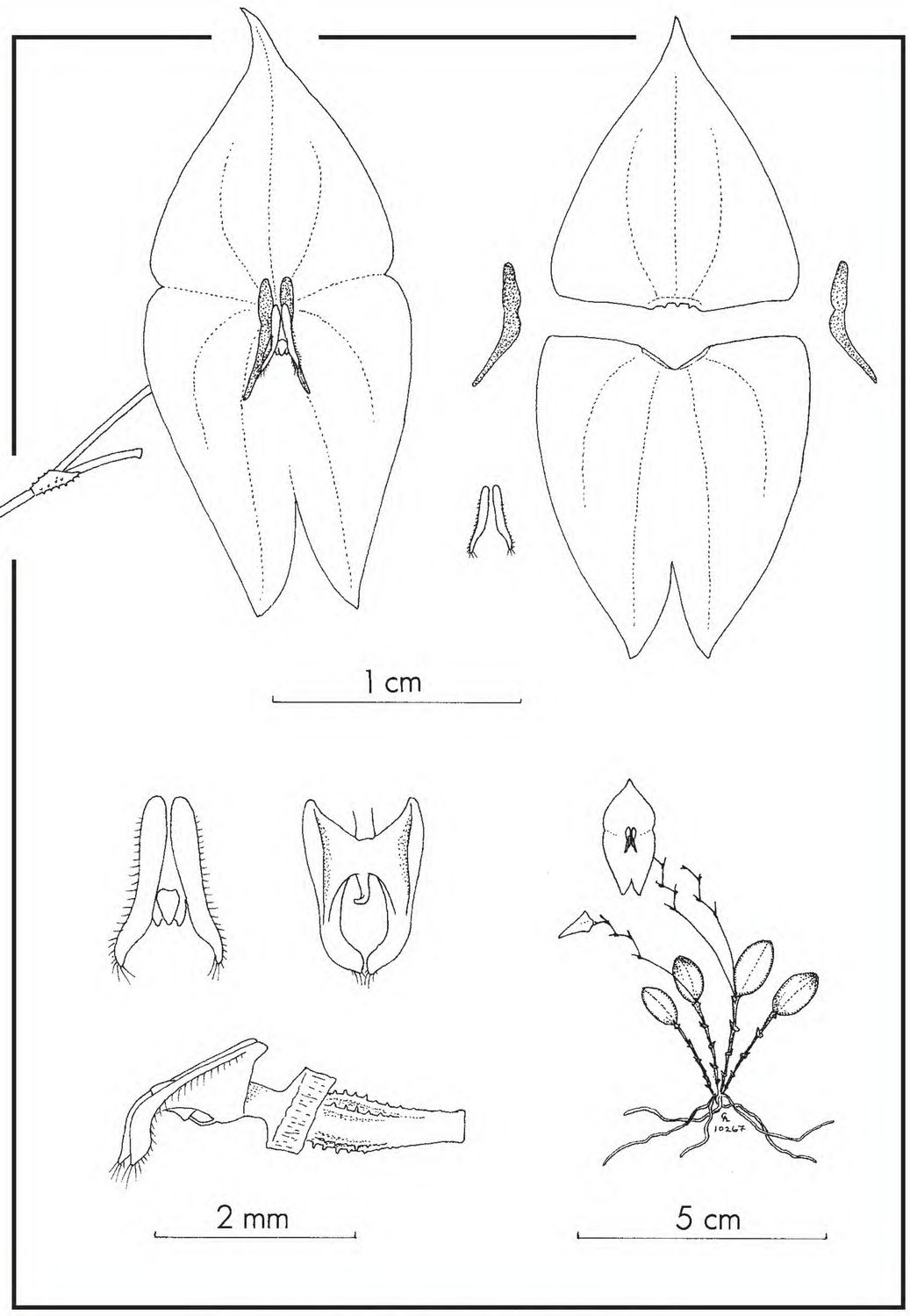



Fig. 14. Lepanthes amplior

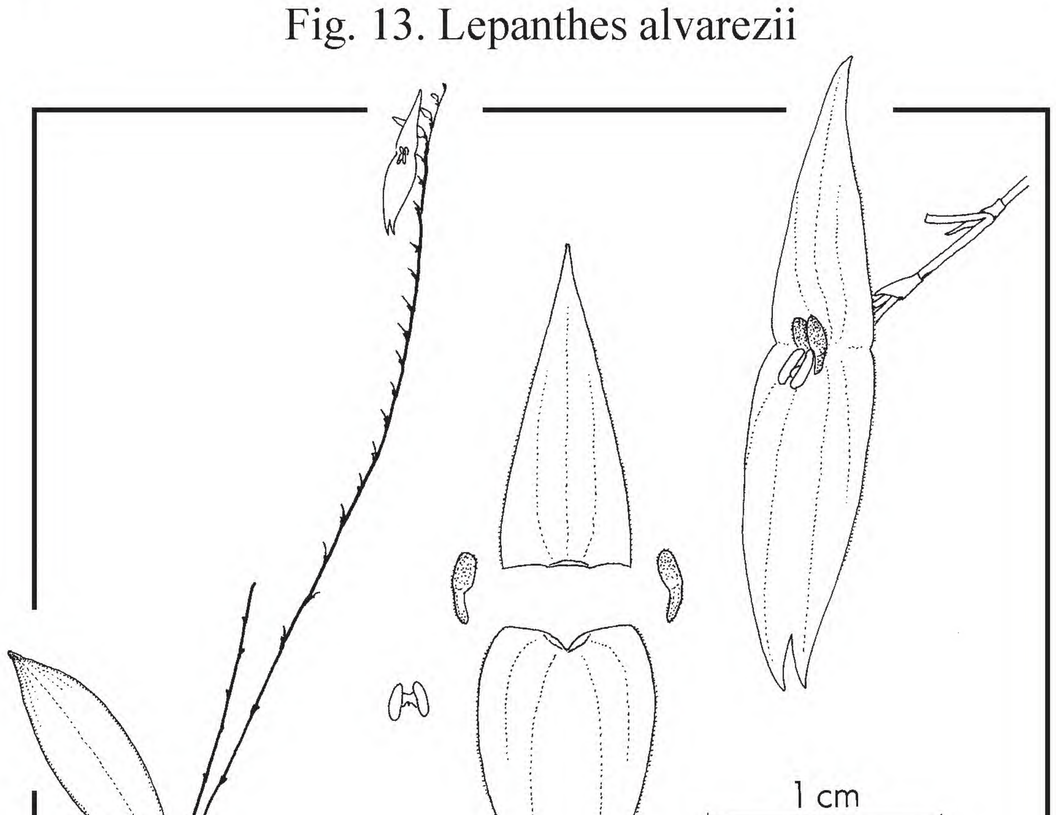



Fig. 15. Lepanthes amplisepala

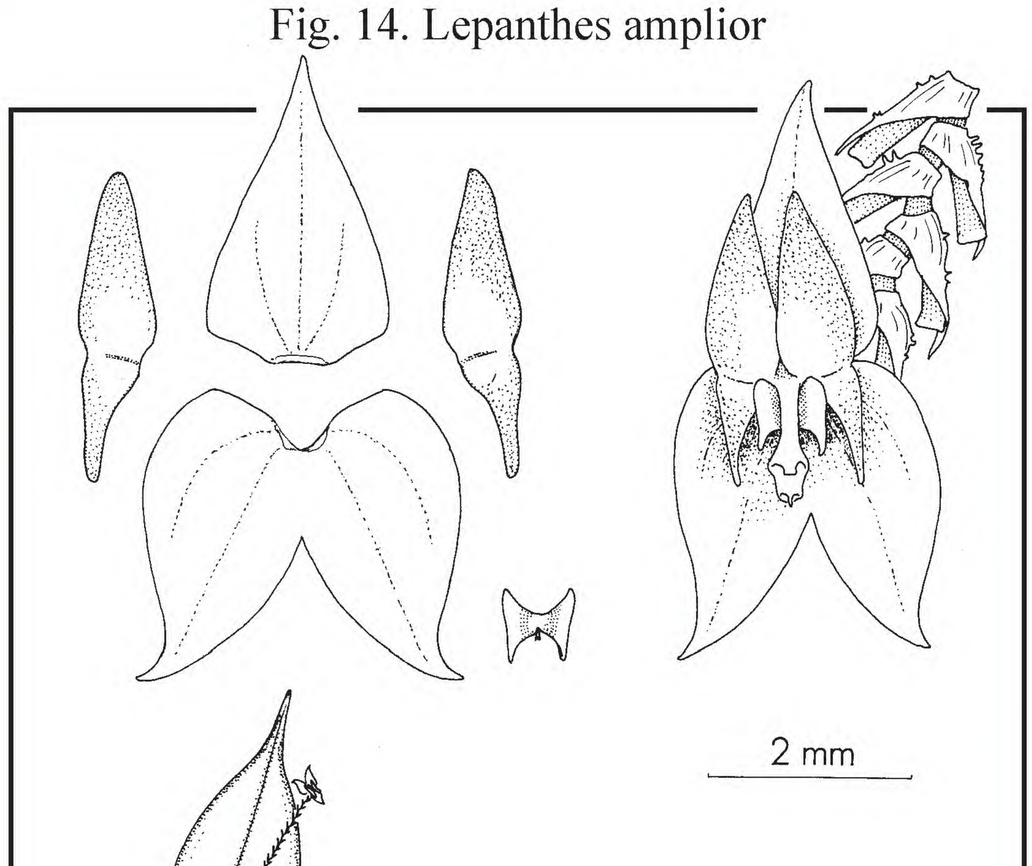



Fig. 16. Lepanthes anatina

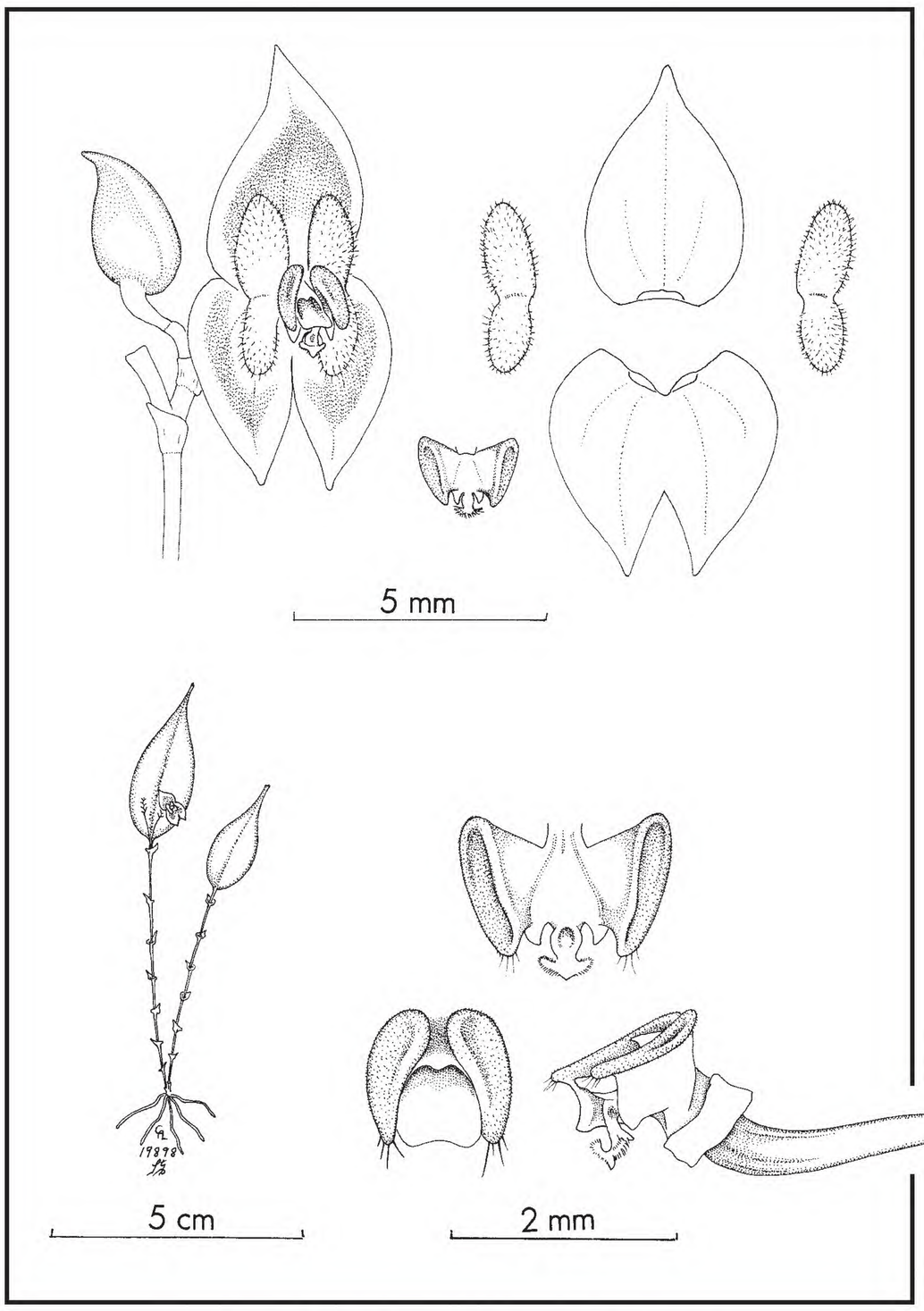



Fig. 17. Lepanthes anchorifera

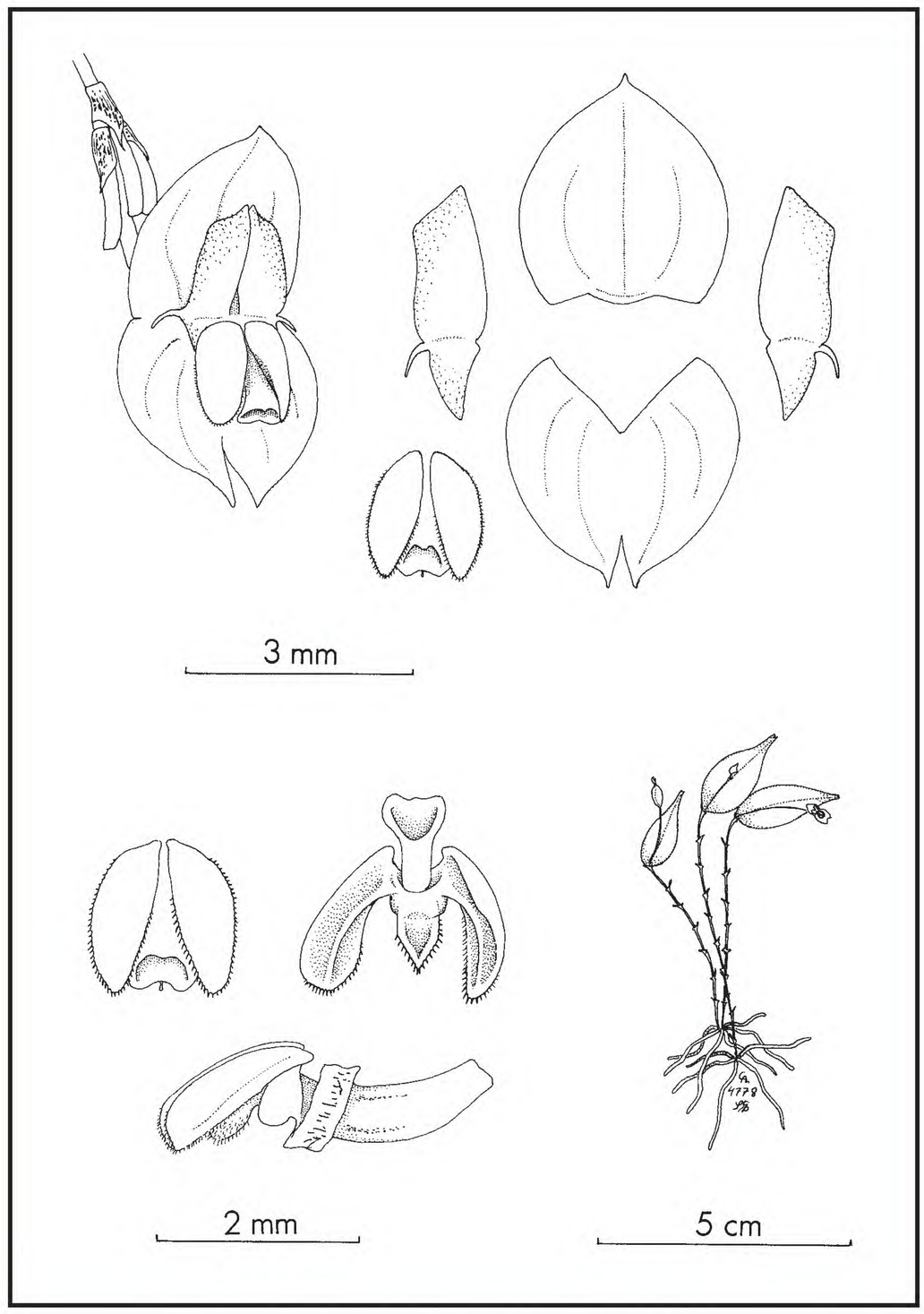



Fig. 18. Lepanthes andrenoglossa

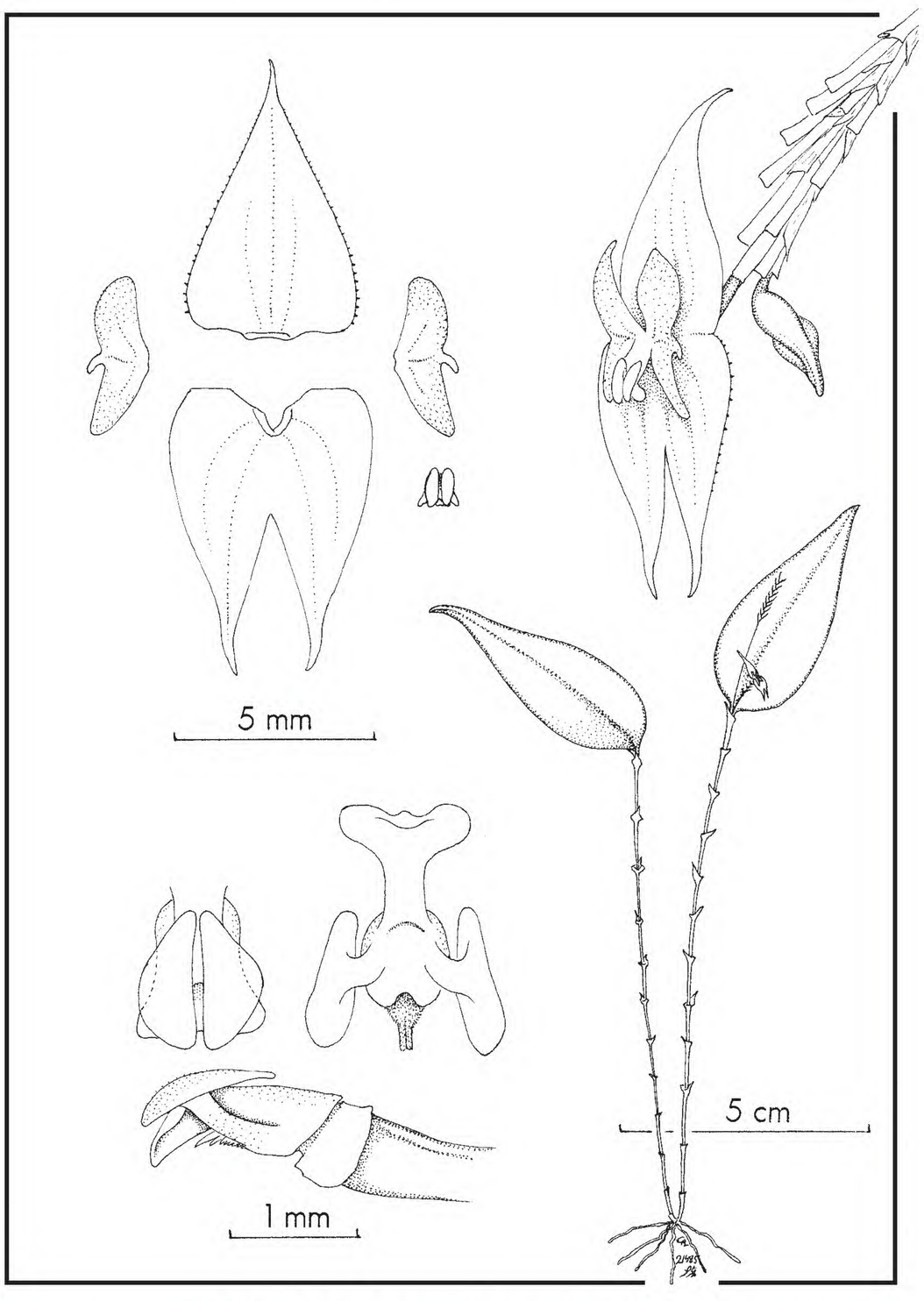



Fig. 19. Lepanthes anemica

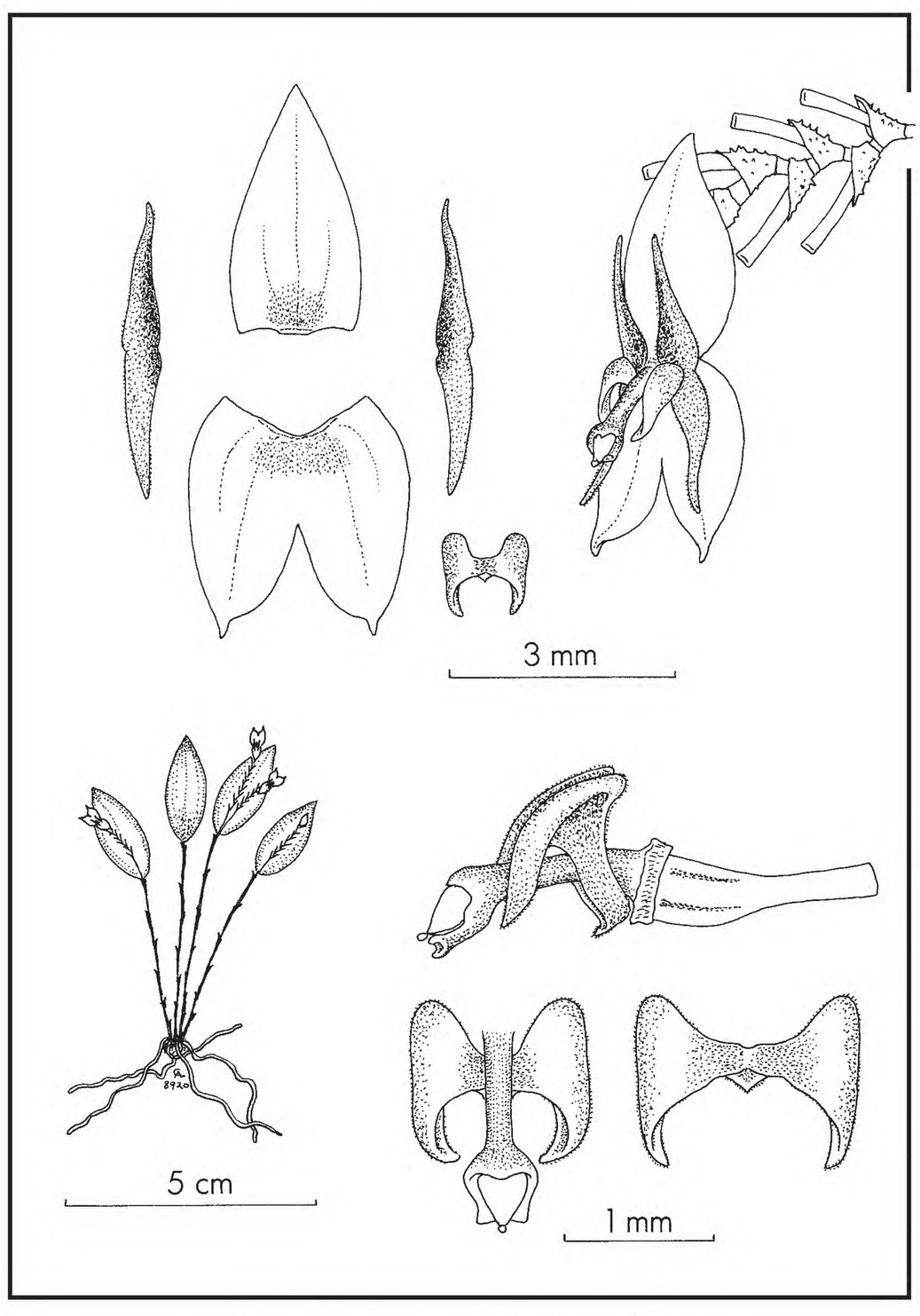



Fig. 20. Lepanthes anserina

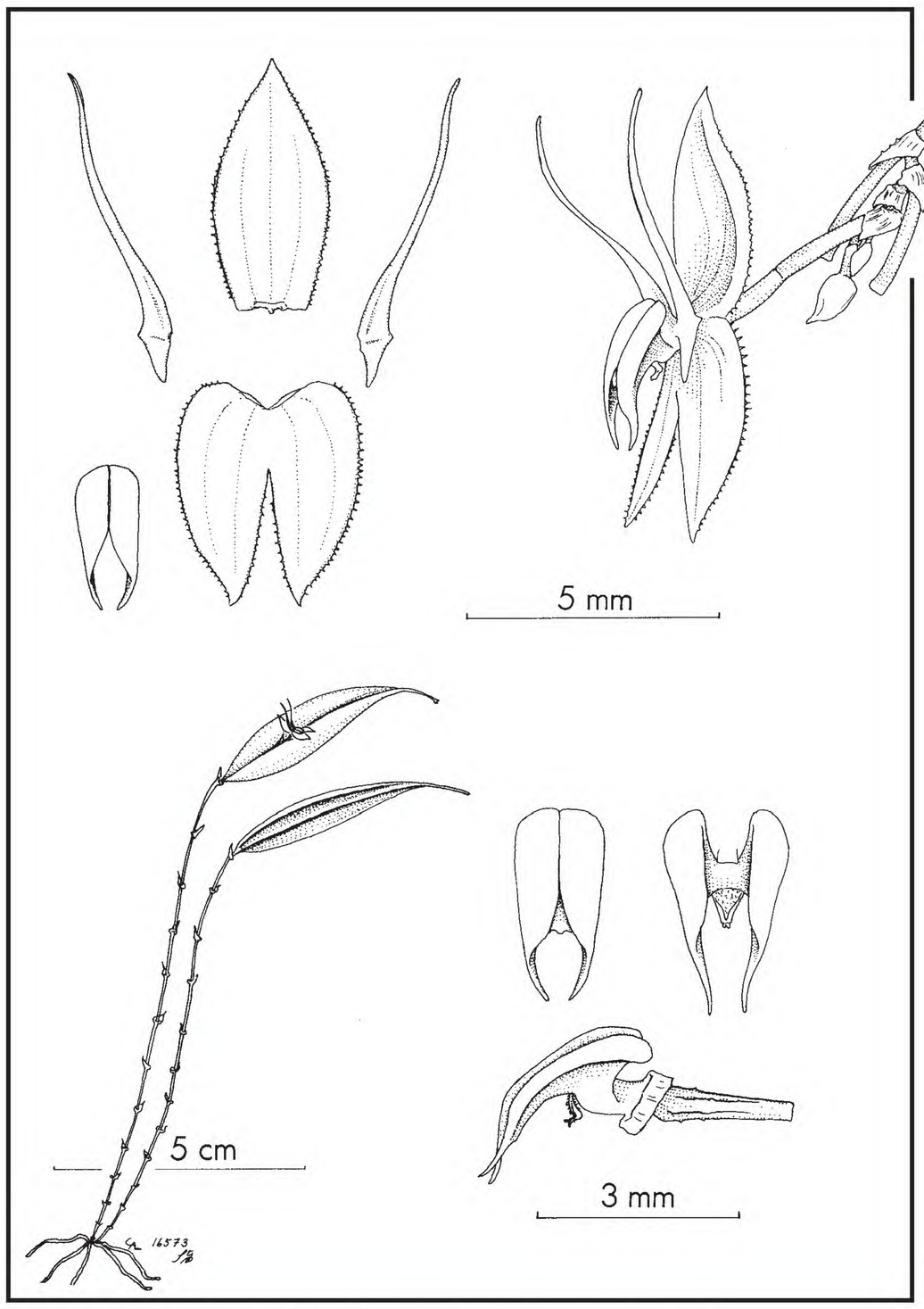



Fig. 21. Lepanthes antennata

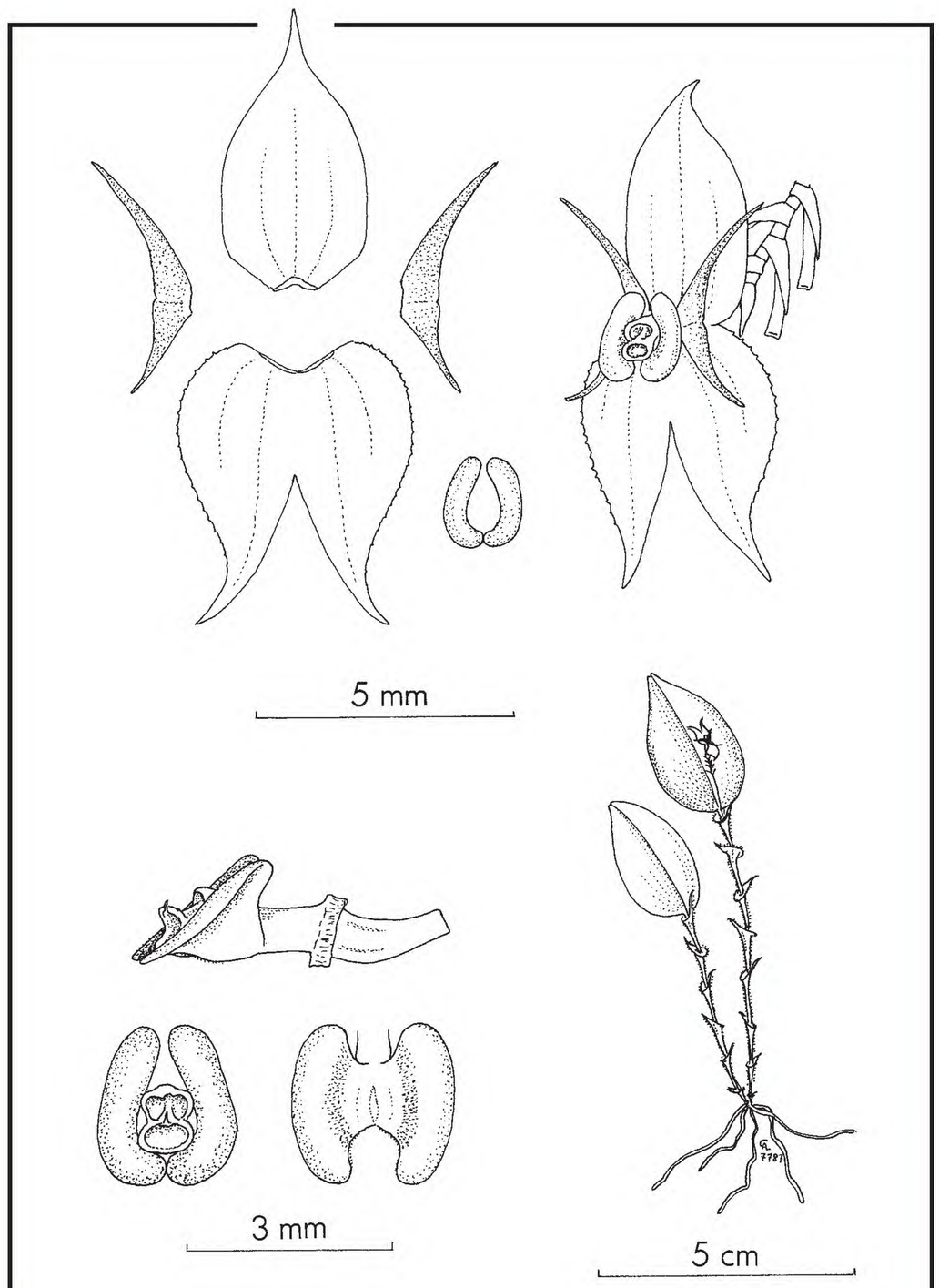



Fig. 22. Lepanthes antennifera

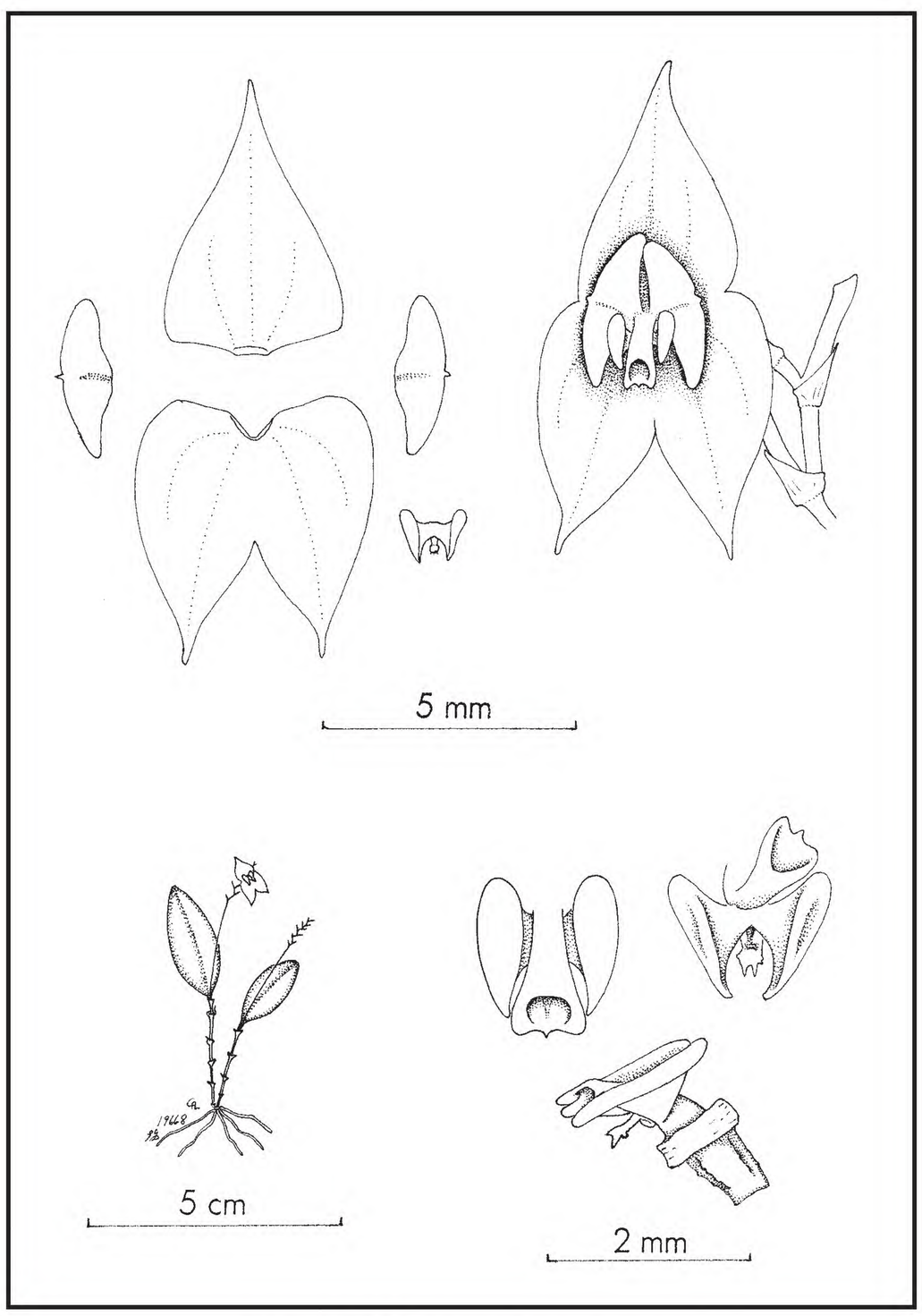



Fig. 23. Lepanthes aperta

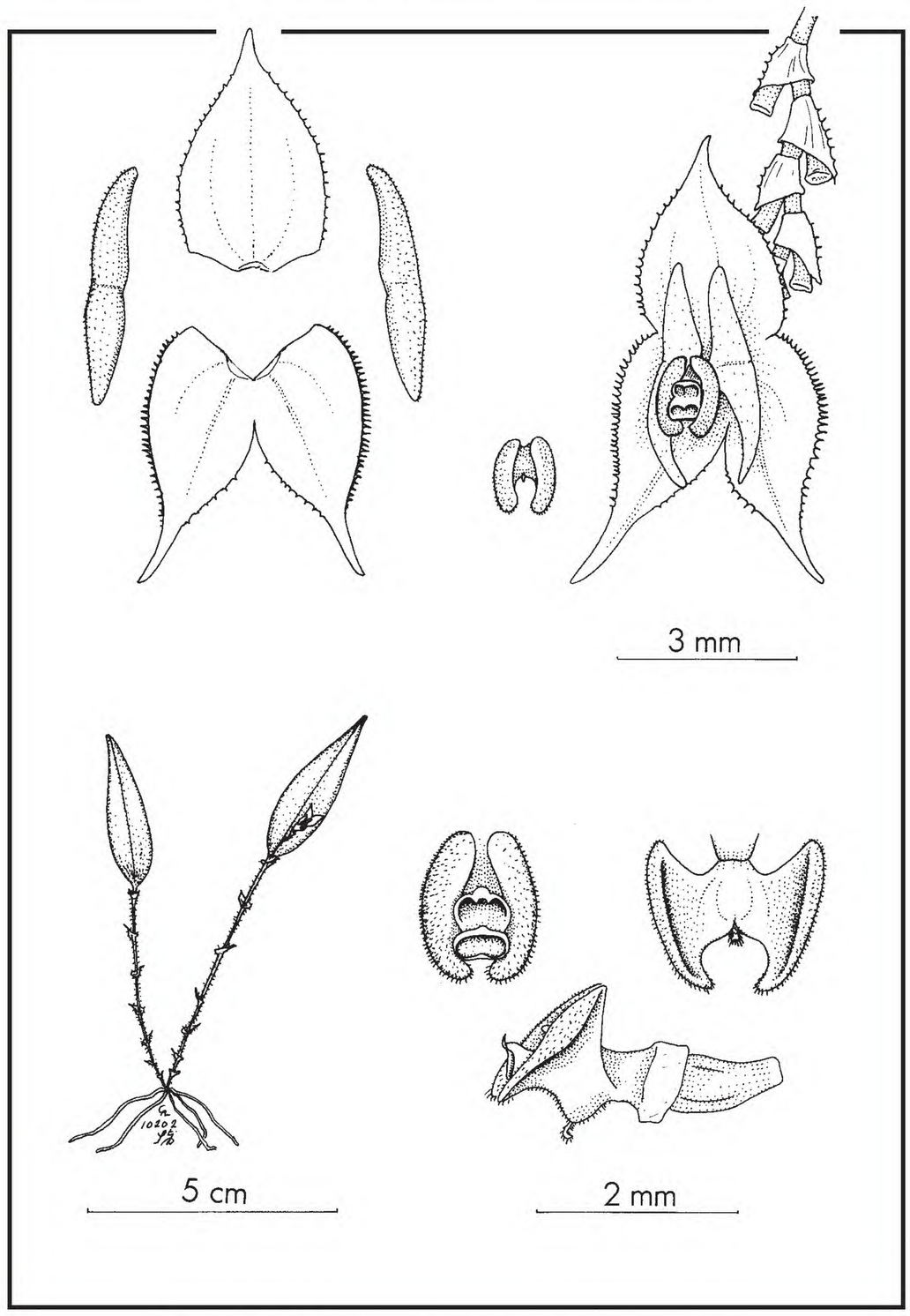



Fig. 24. Lepanthes aquila-borussiae

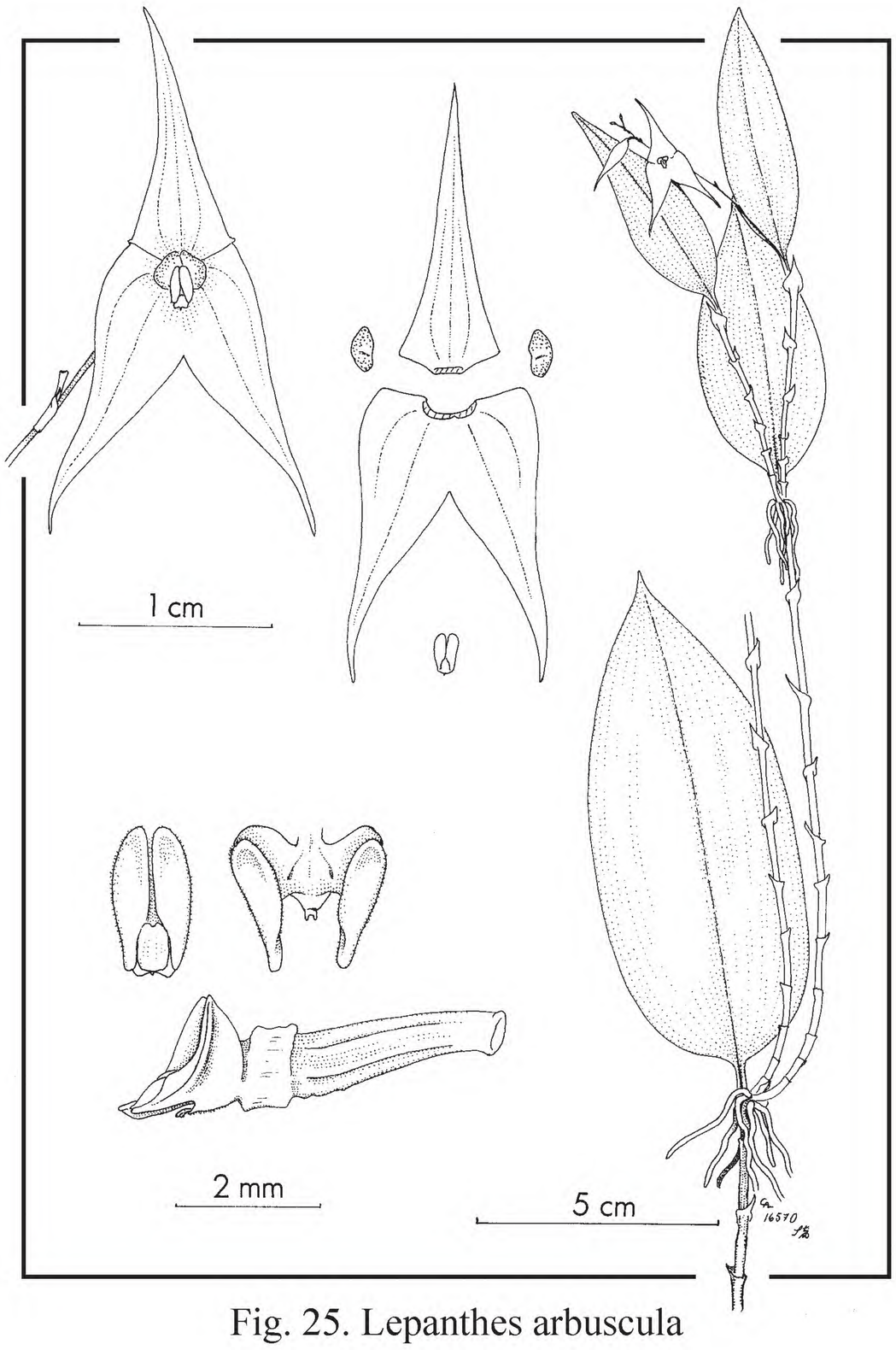



Fig. 25. Lepanthes arbuscula

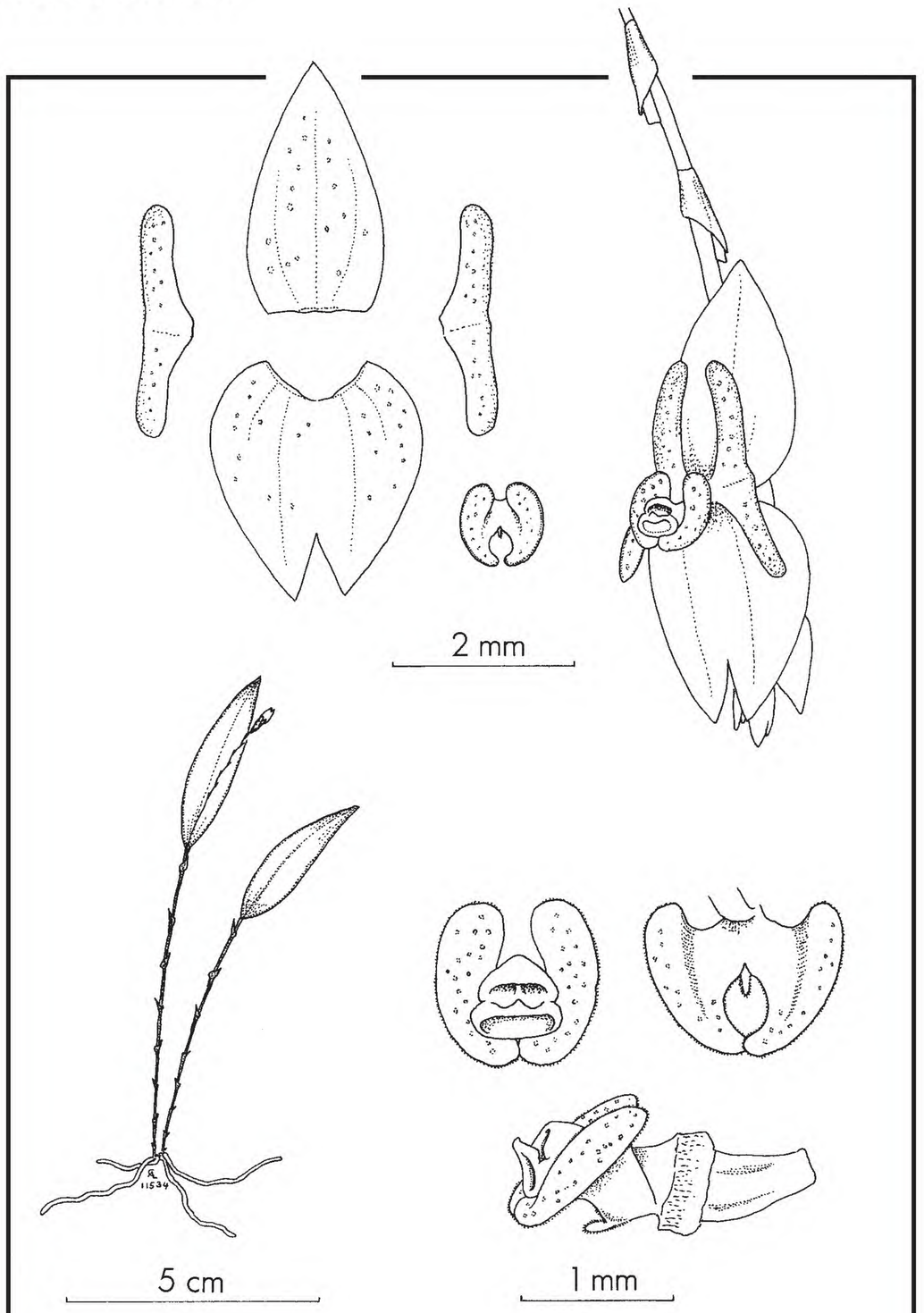



Fig. 26. Lepanthes argentata

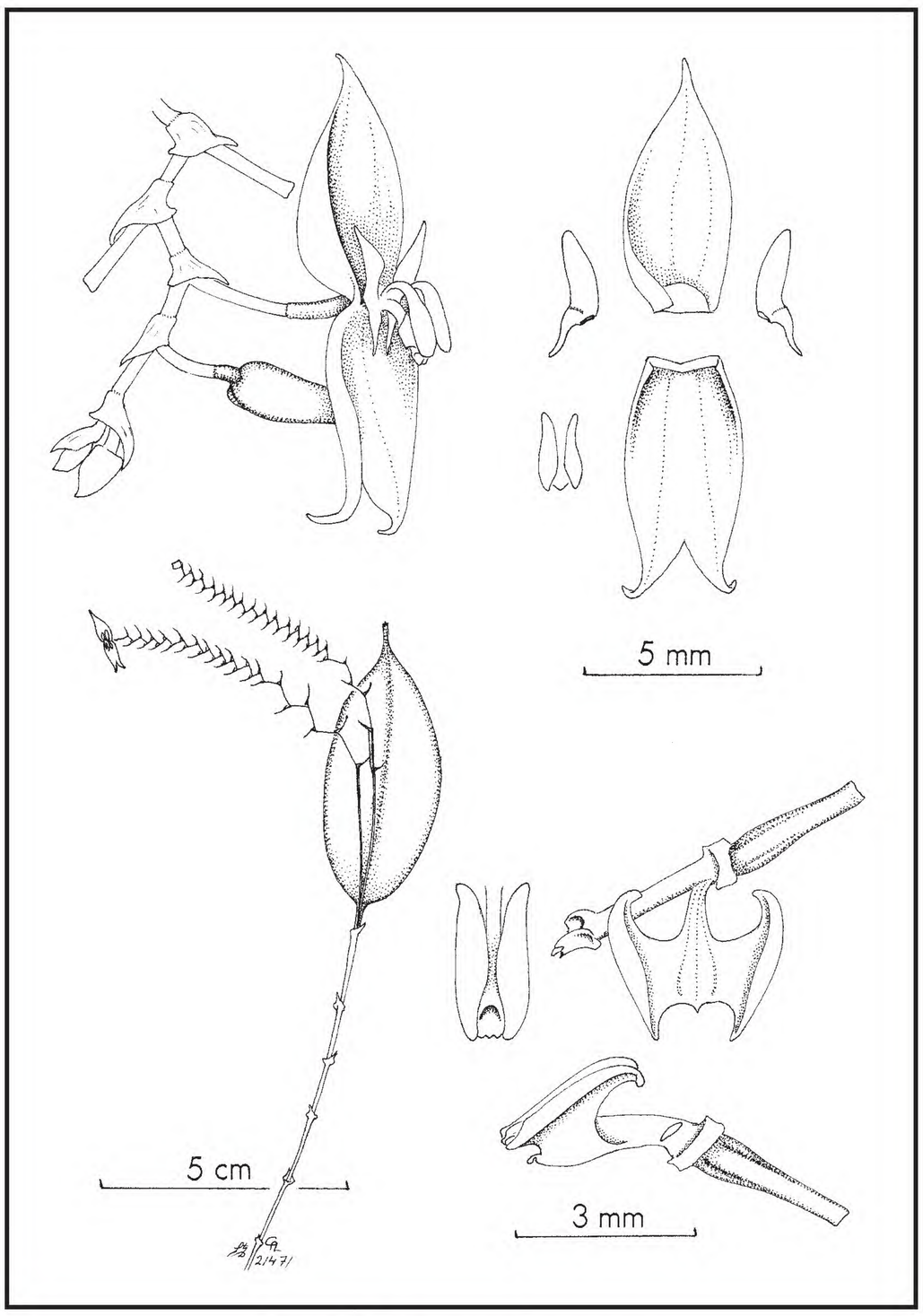



Fig. 27. Lepanthes aries

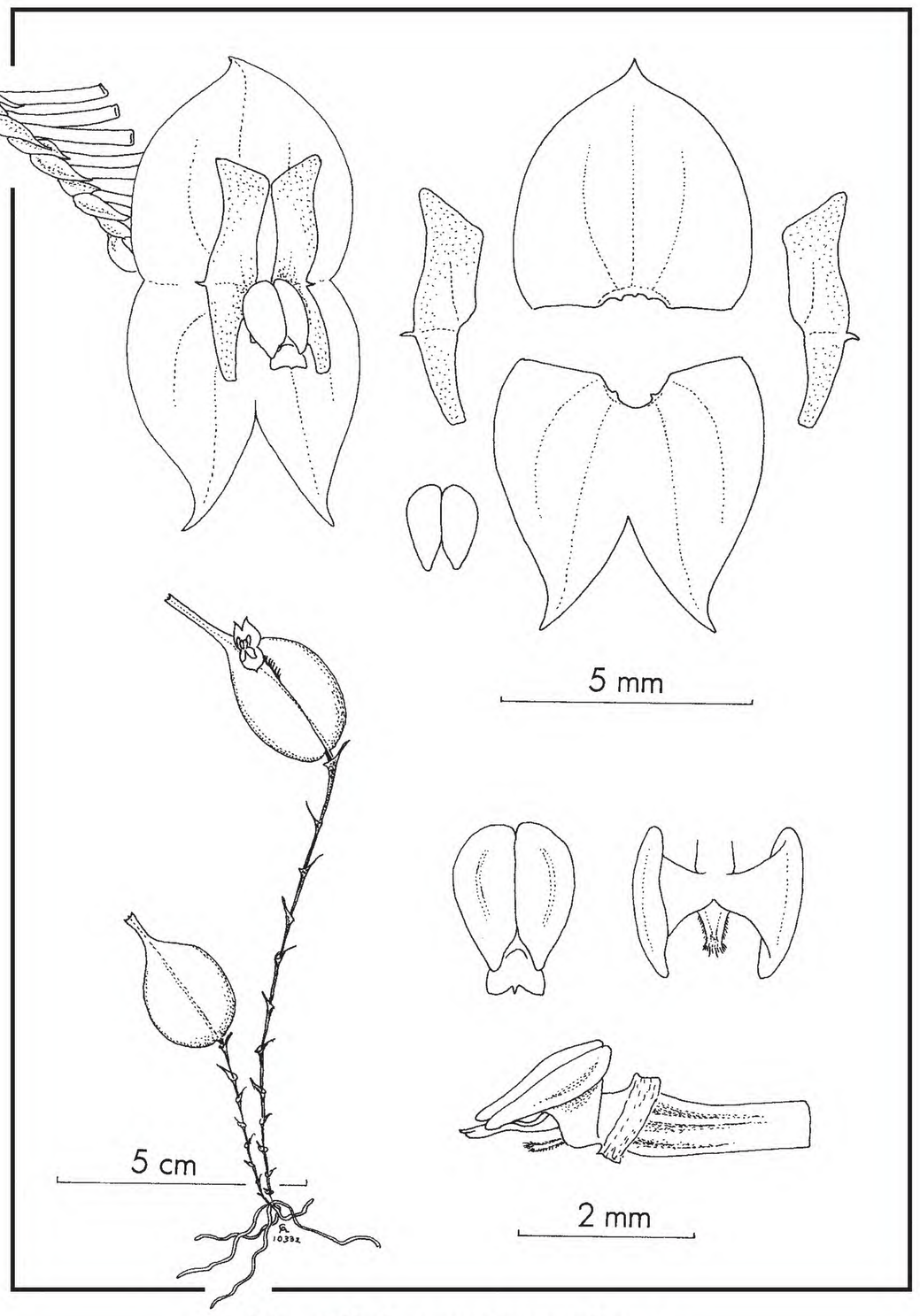



Fig. 28. Lepanthes aristata

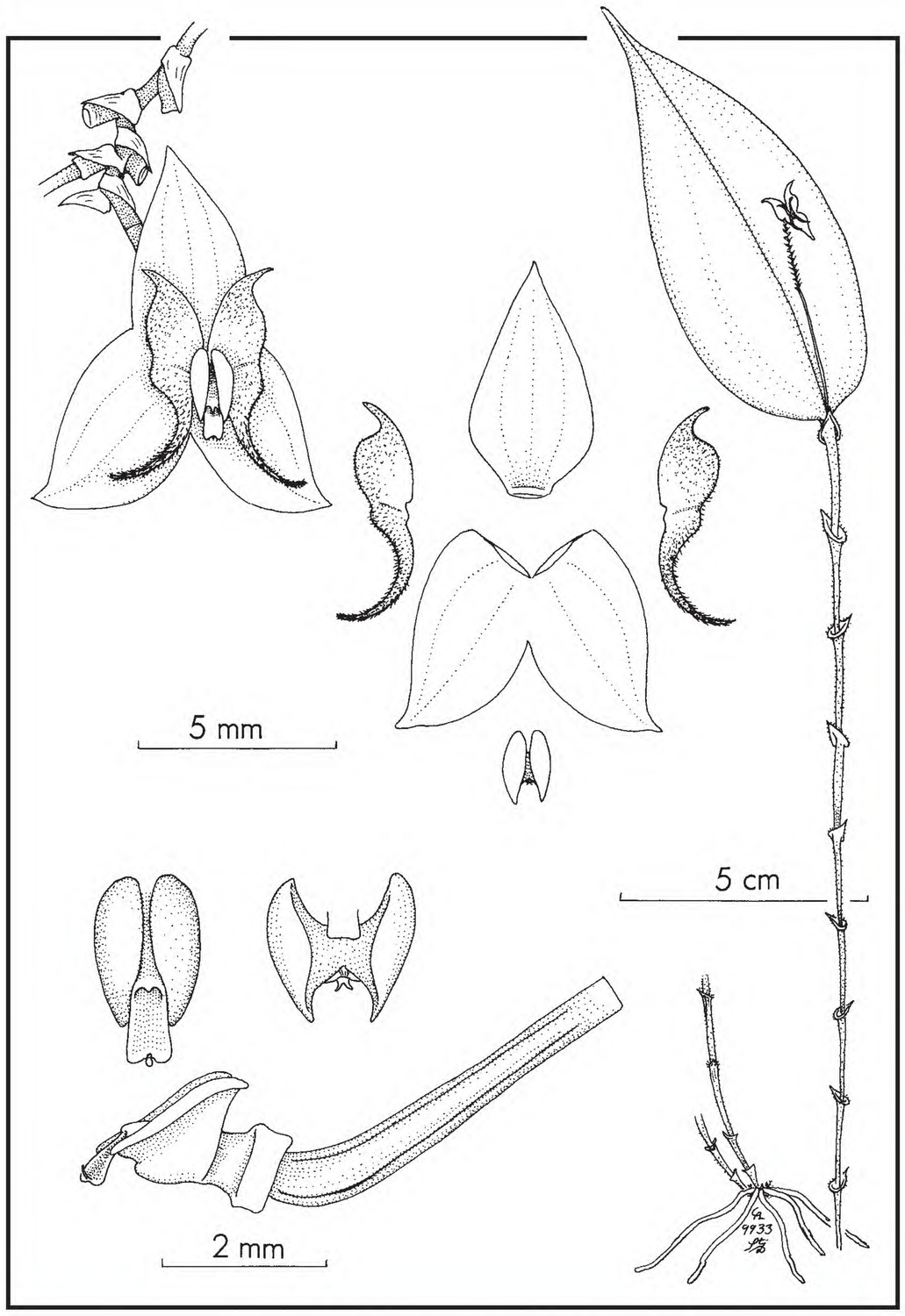



Fig. 29. Lepanthes athena

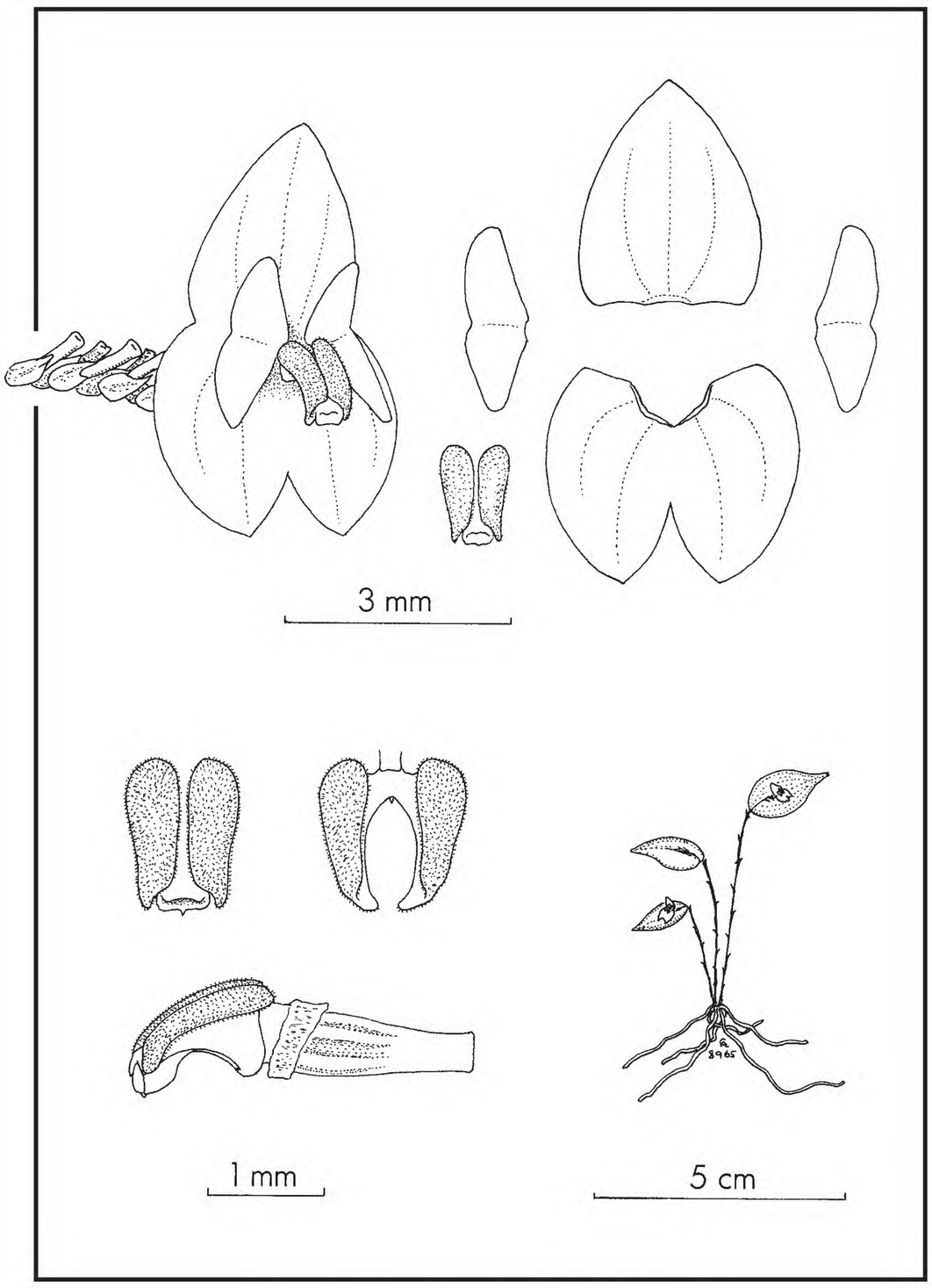



Fig. 30. Lepanthes atomifera

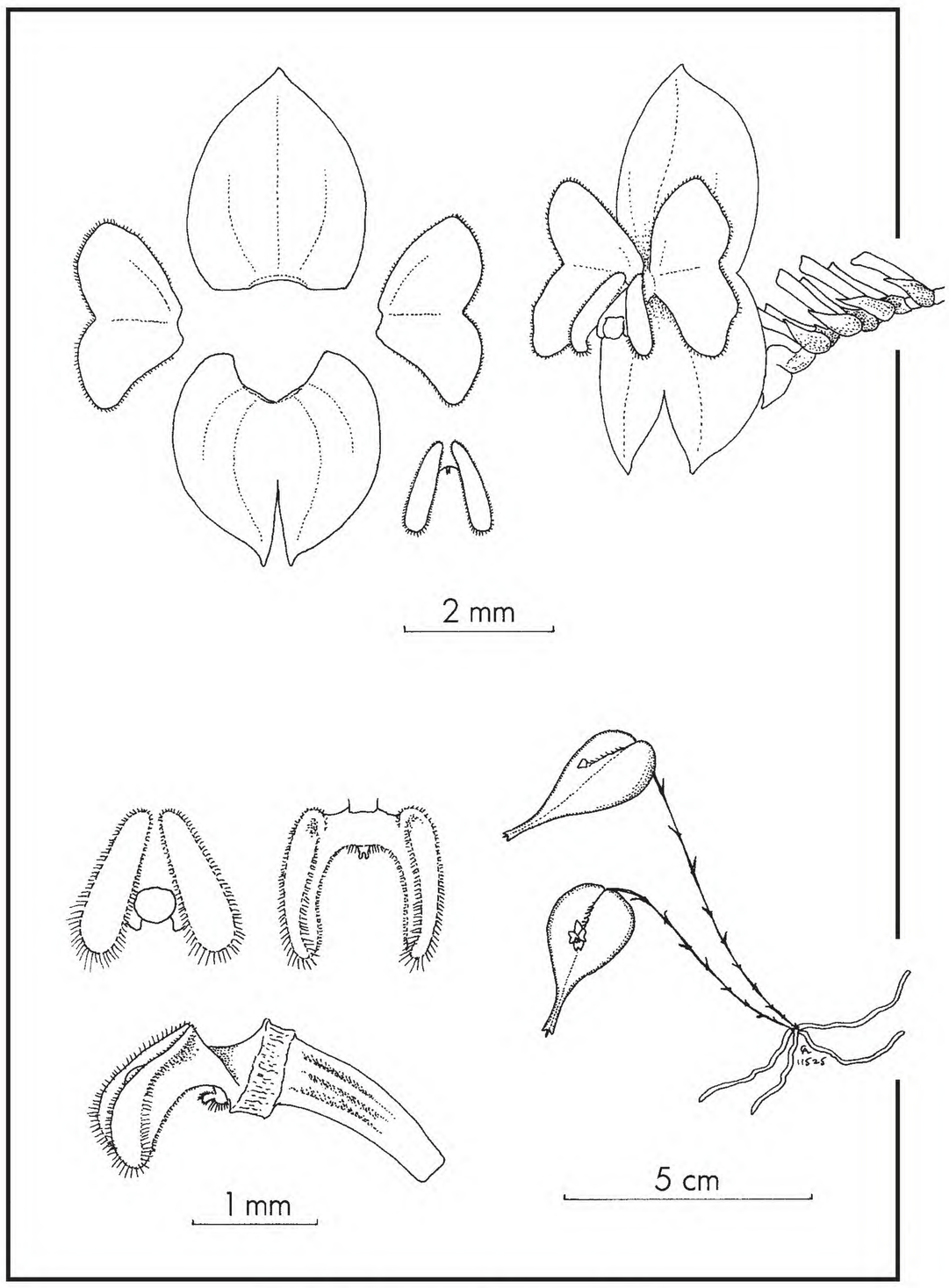



Fig. 31. Lepanthes auditor

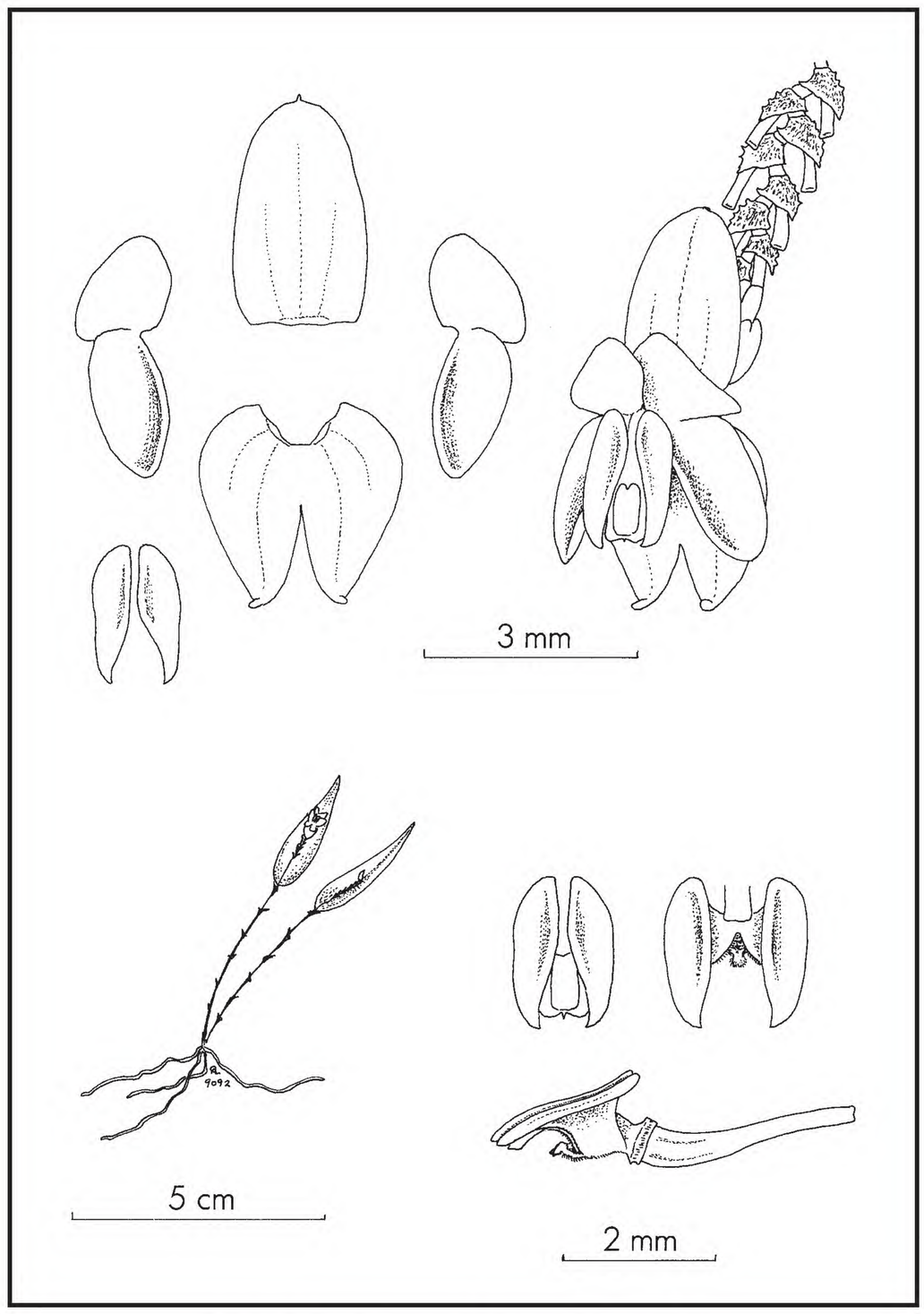



Fig. 32. Lepanthes aures-asini

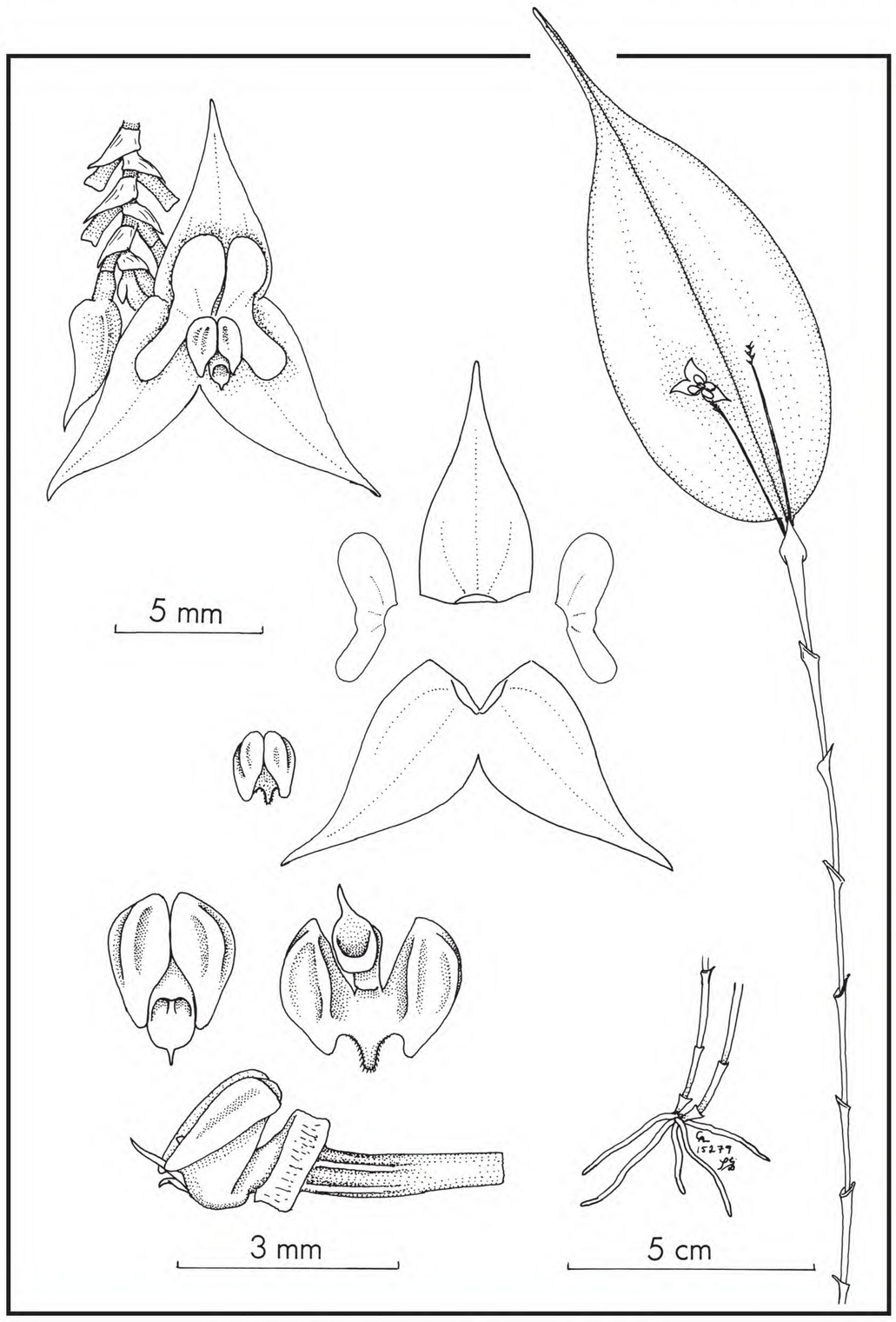



Fig. 33. Lepanthes auriculata

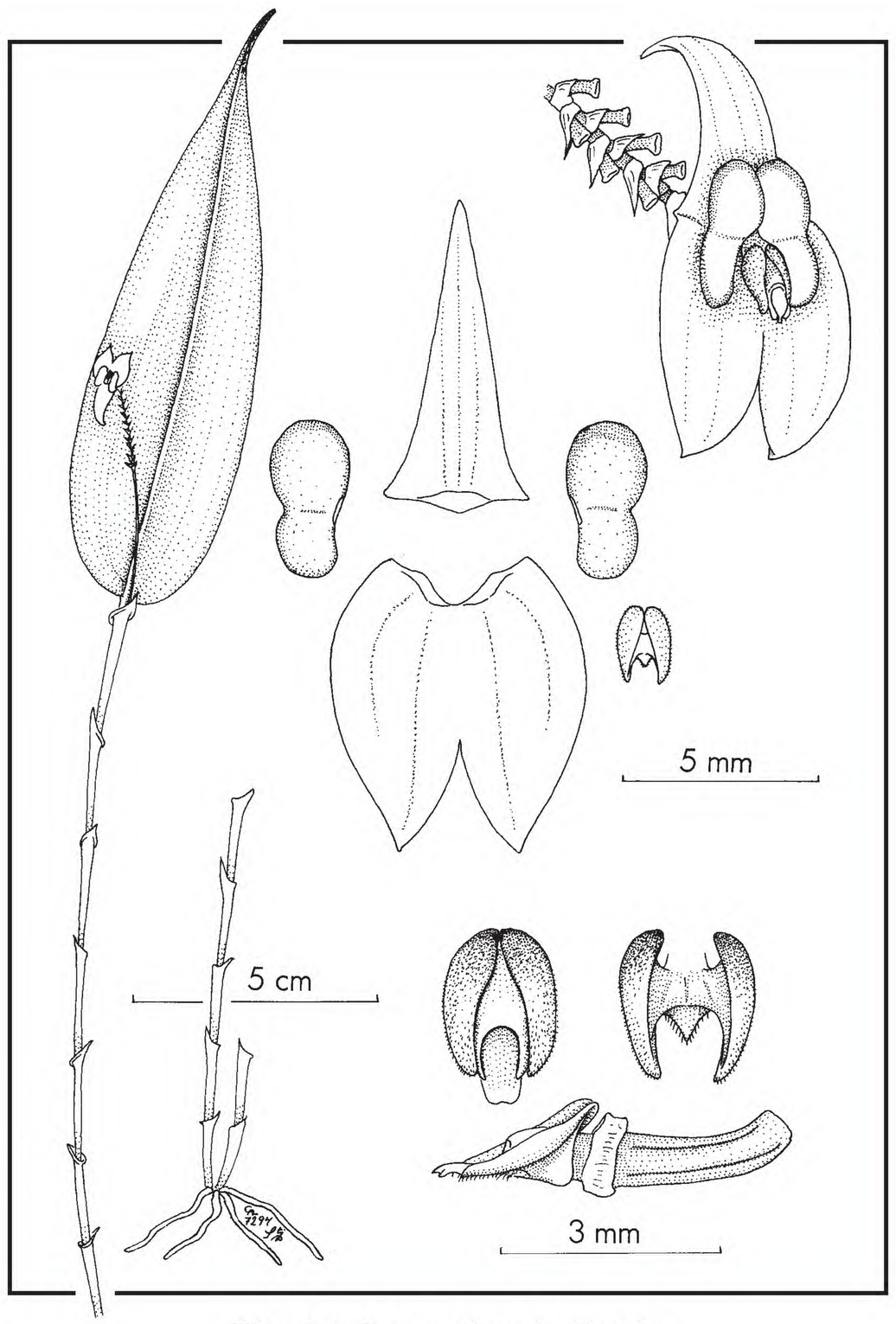



Fig. 34. Lepanthes ballatrix

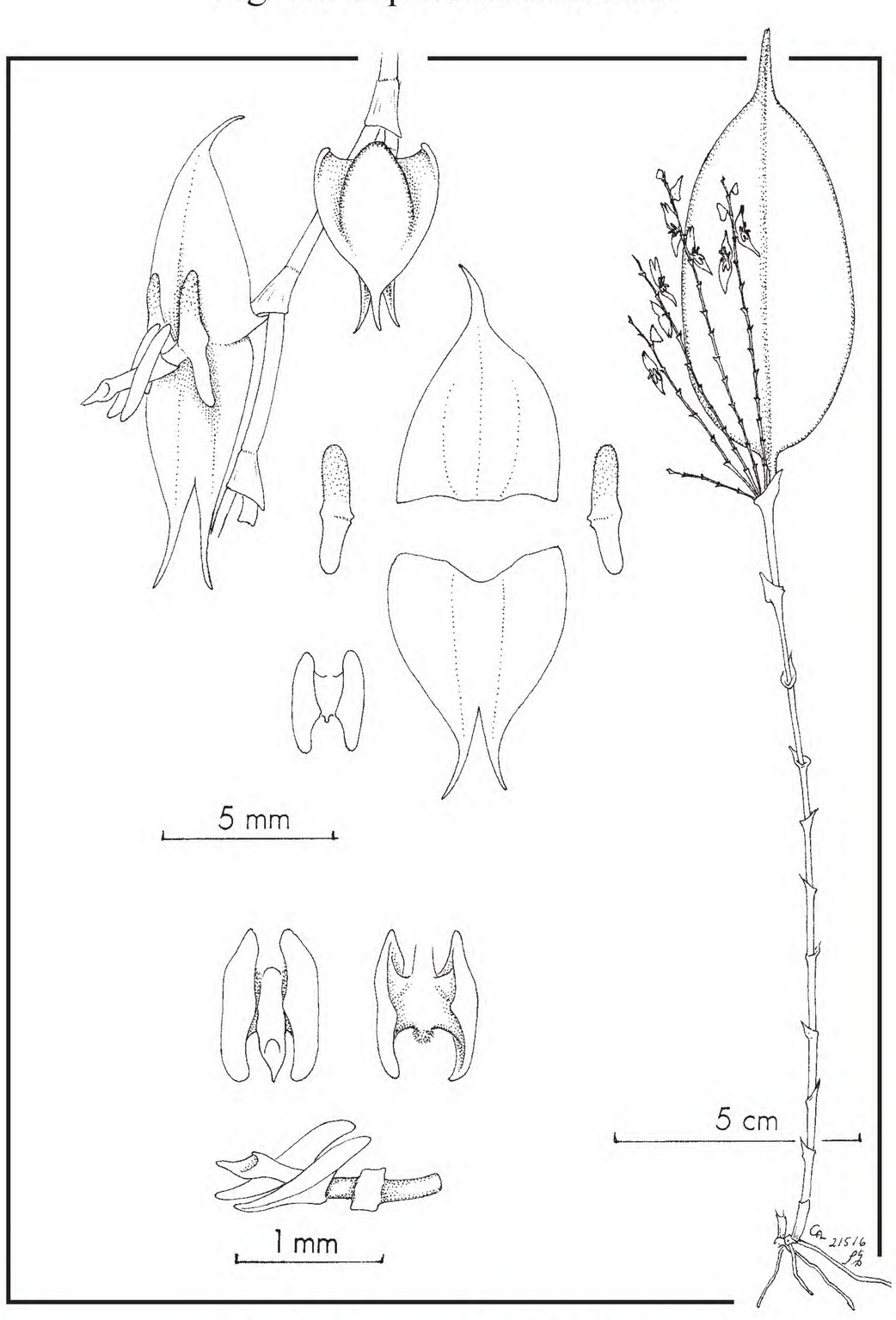



Fig. 35. Lepanthes barclaya

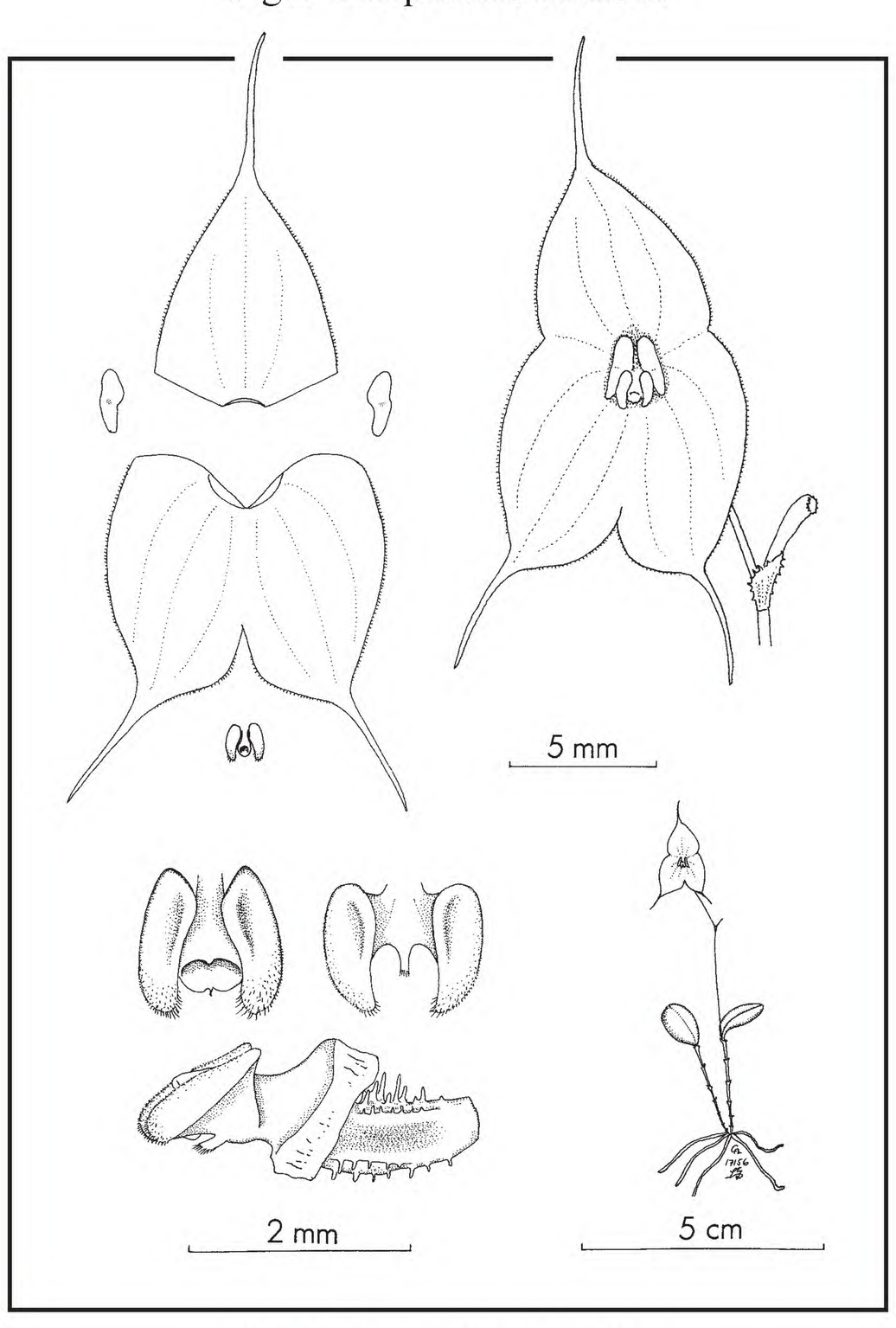



Fig. 36. Lepanthes beatrizae

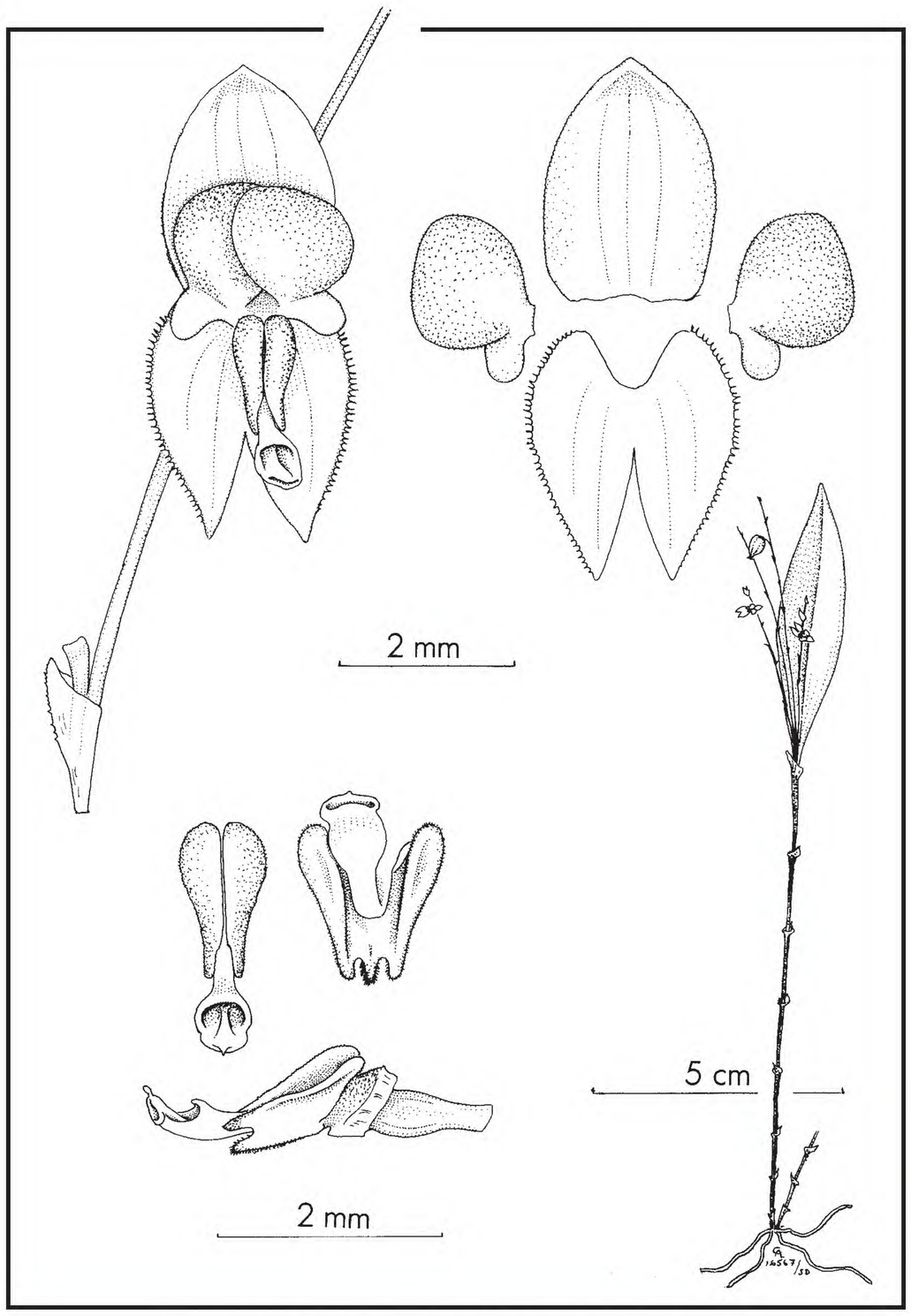



Fig. 37. Lepanthes biglomeris

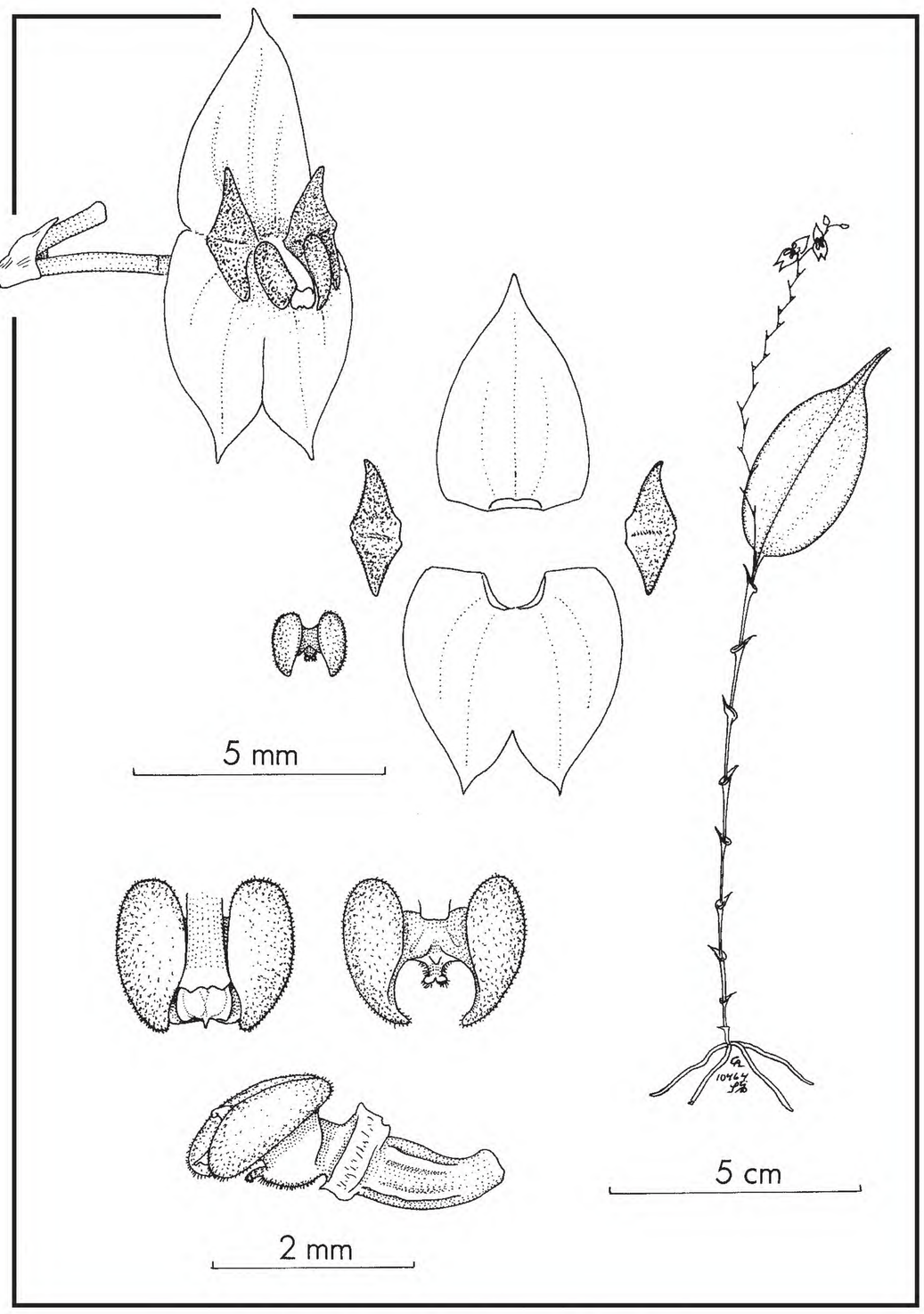



Fig. 38. Lepanthes biloba

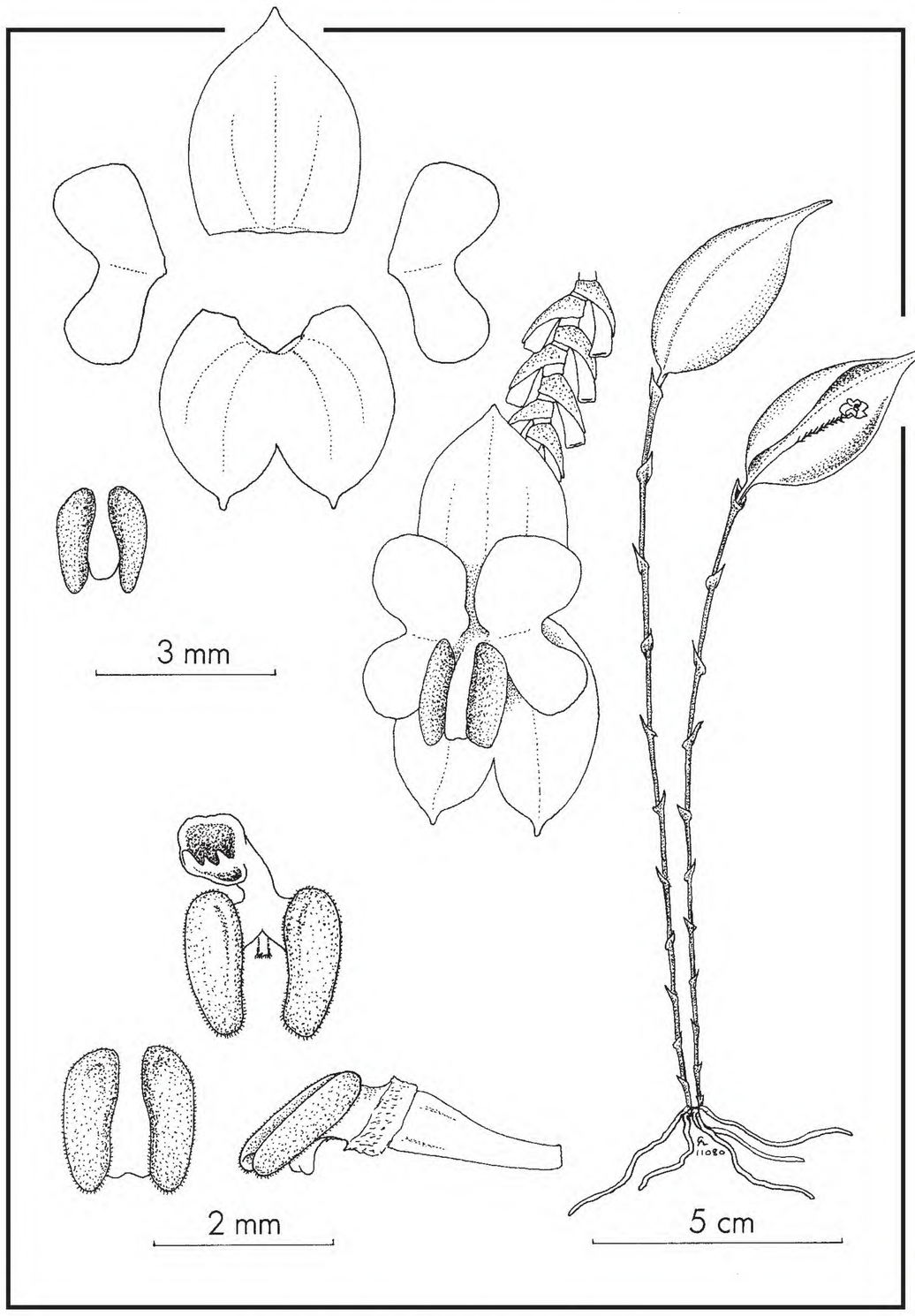



Fig. 39. Lepanthes binaria

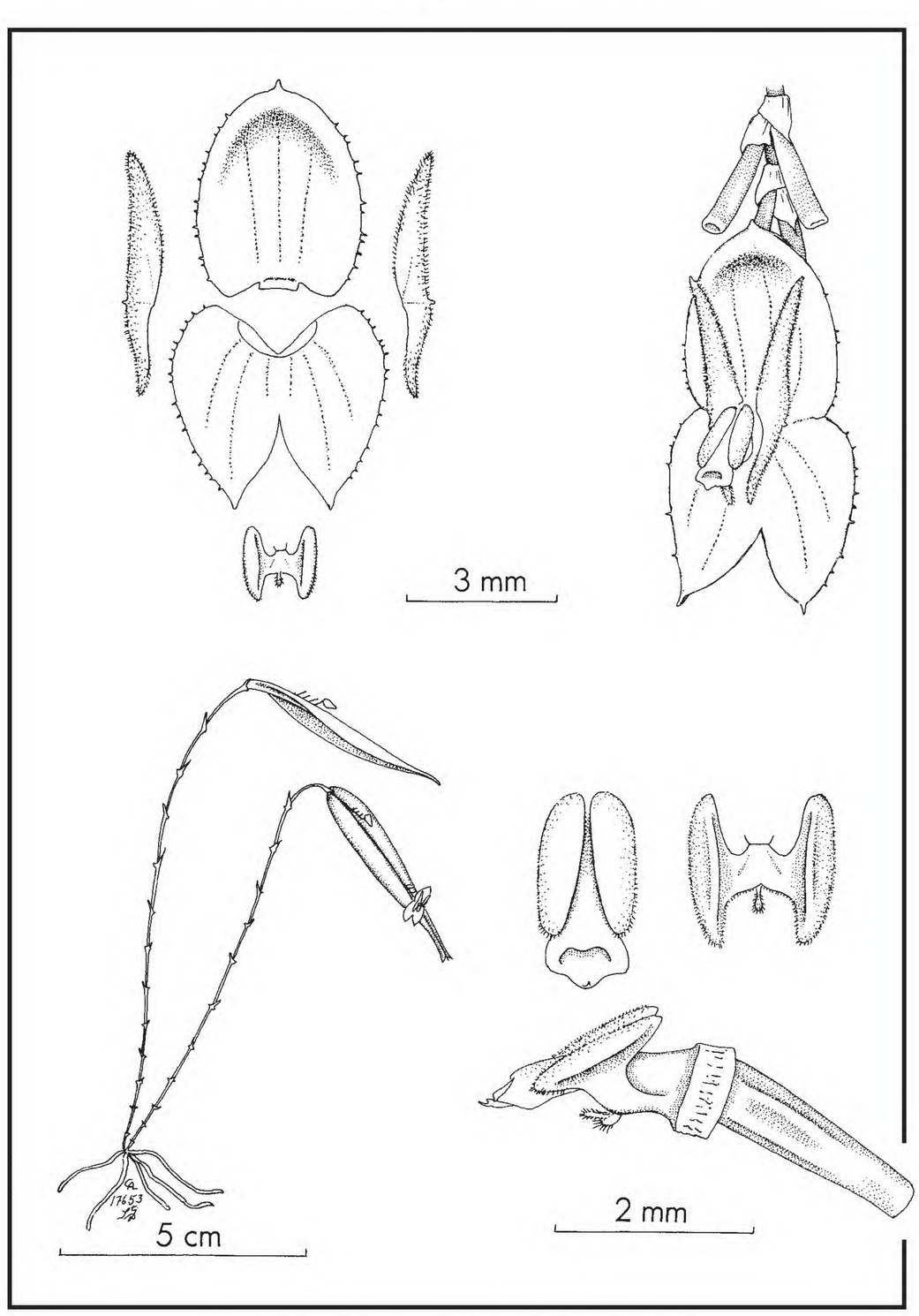



Fig. 40. Lepanthes bipinnatula

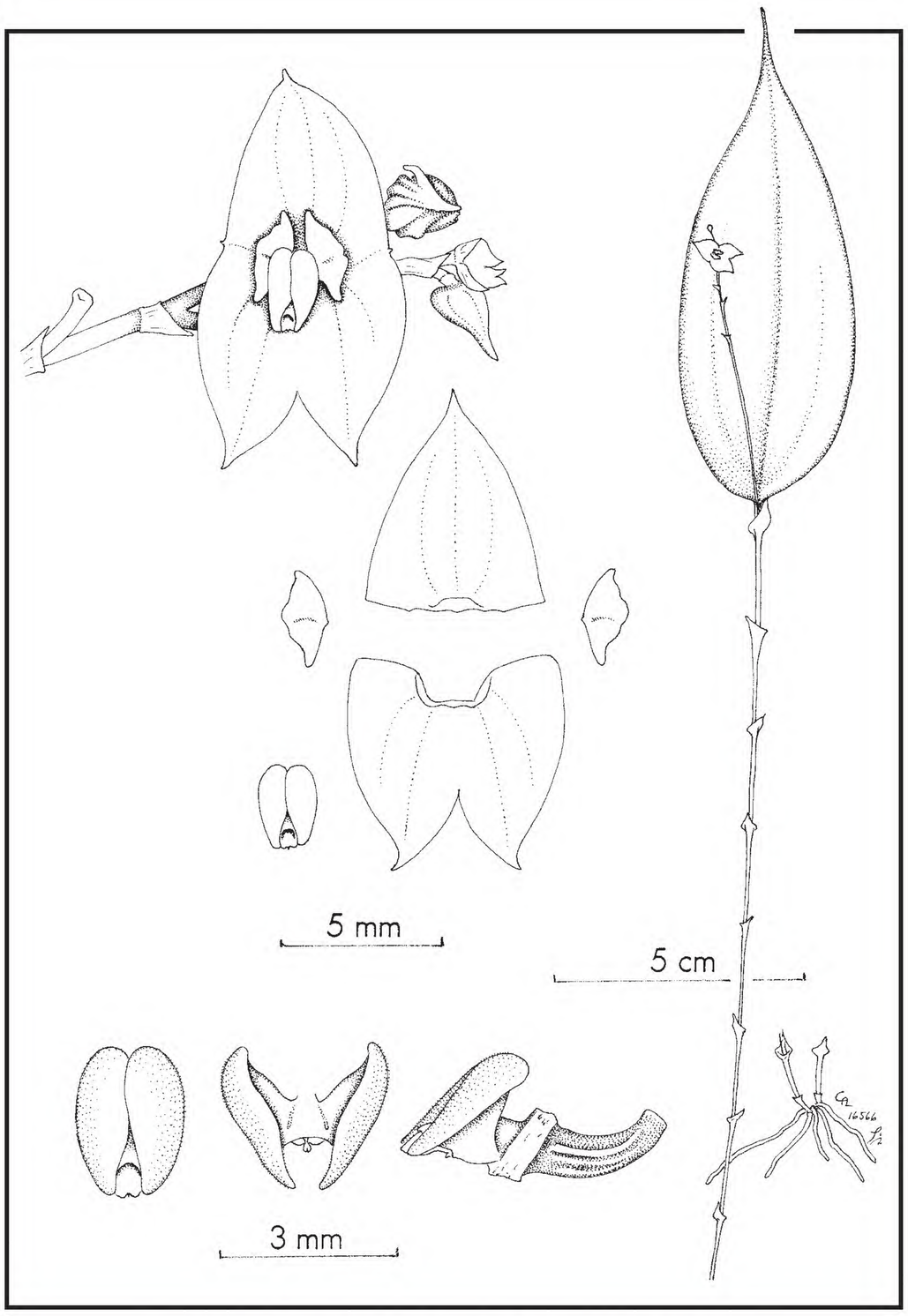



Fig. 41. Lepanthes bitriangularis

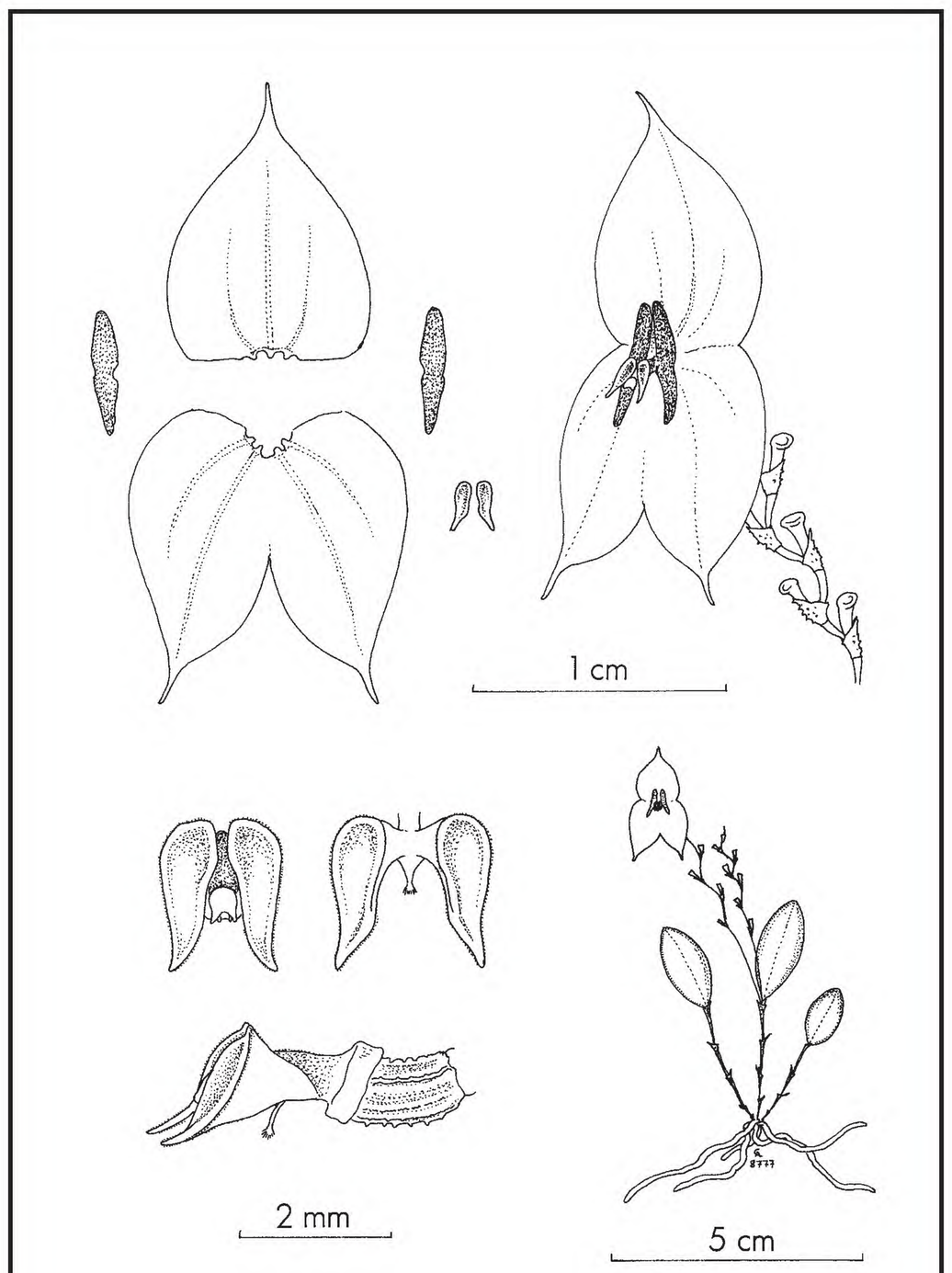



Fig. 42. Lepanthes boyacensis

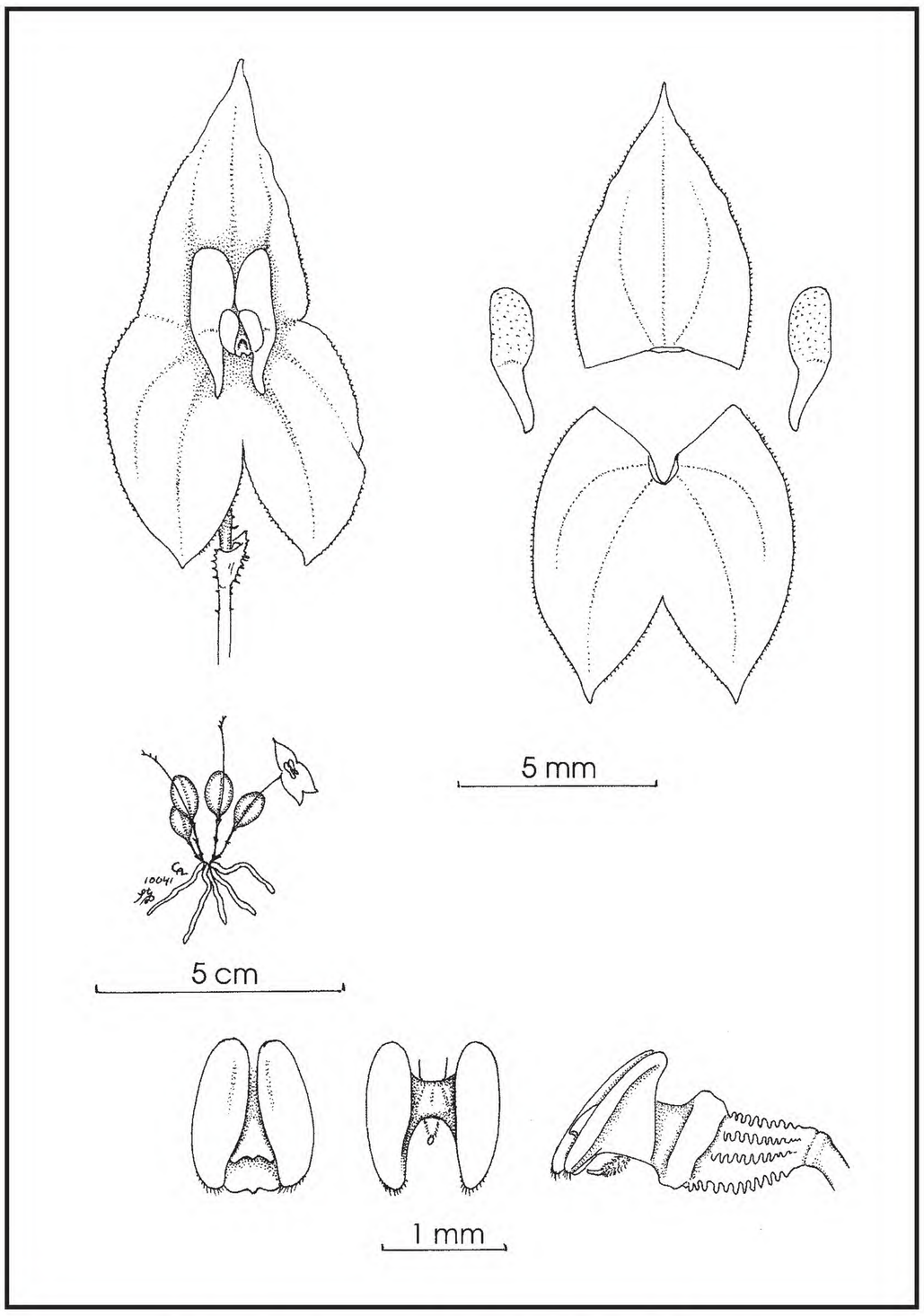



Fig. 43. Lepanthes brevipedicellata

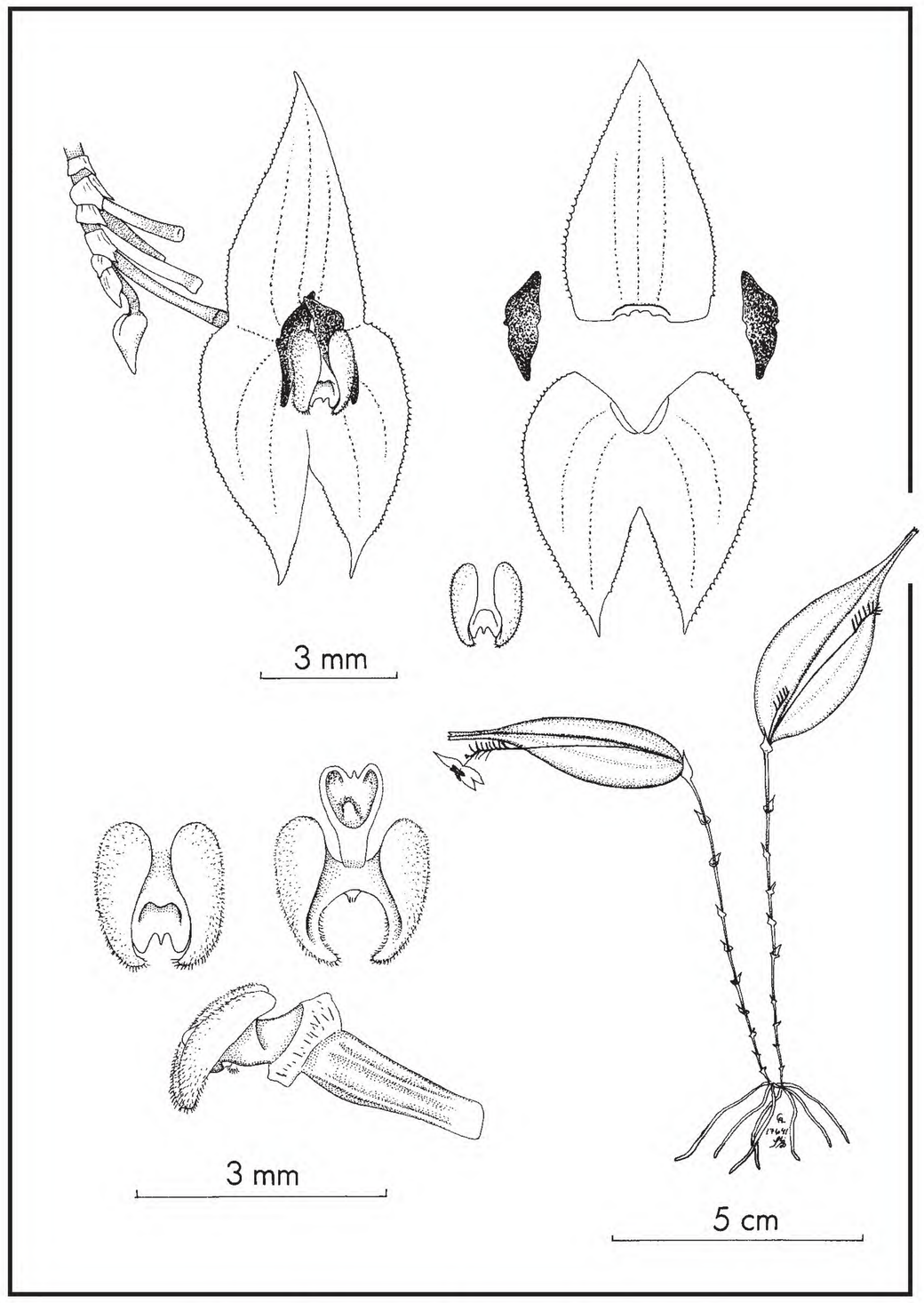



Fig. 44. Lepanthes cacique-tone

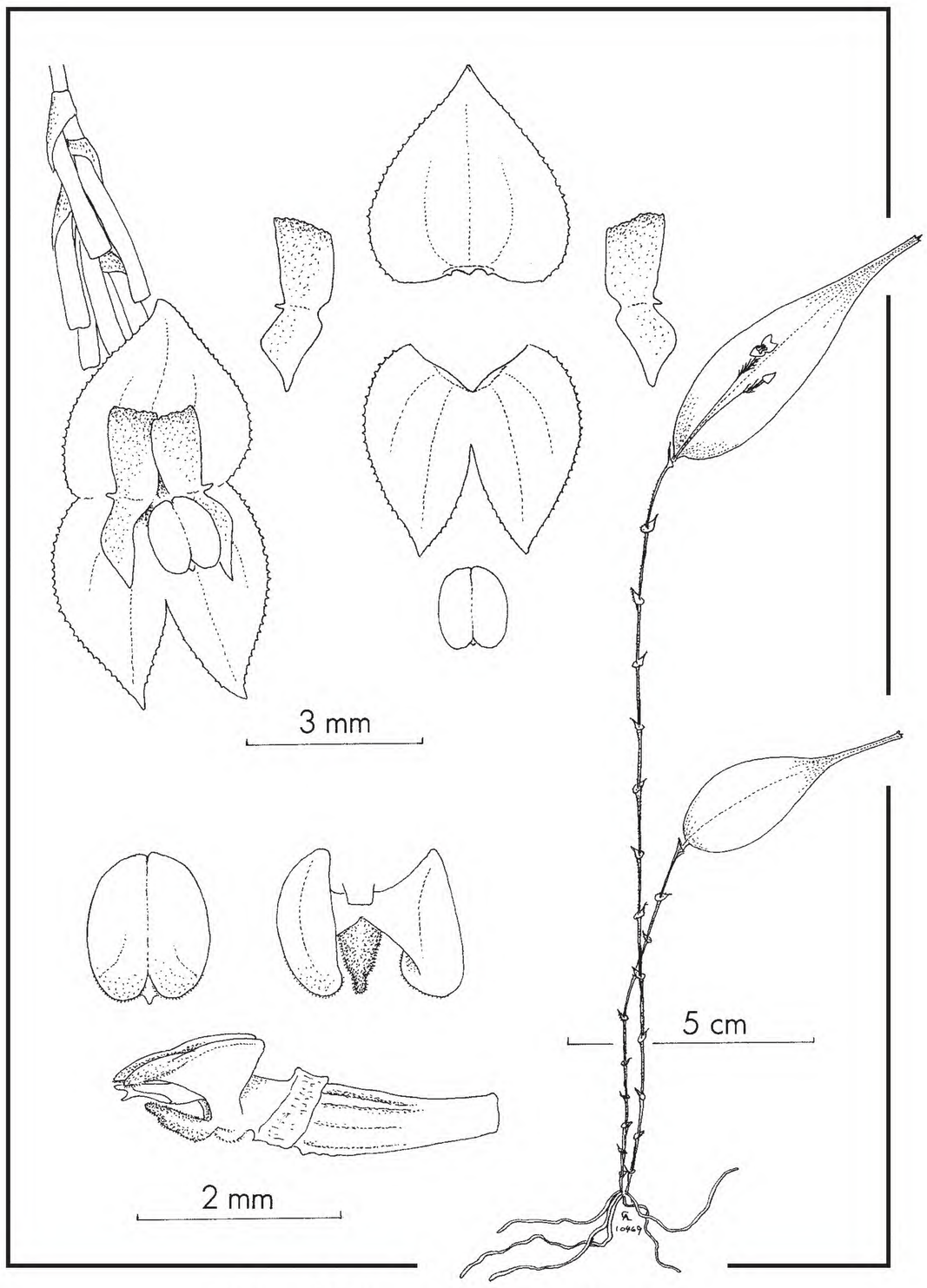



Fig. 45. Lepanthes cactoura

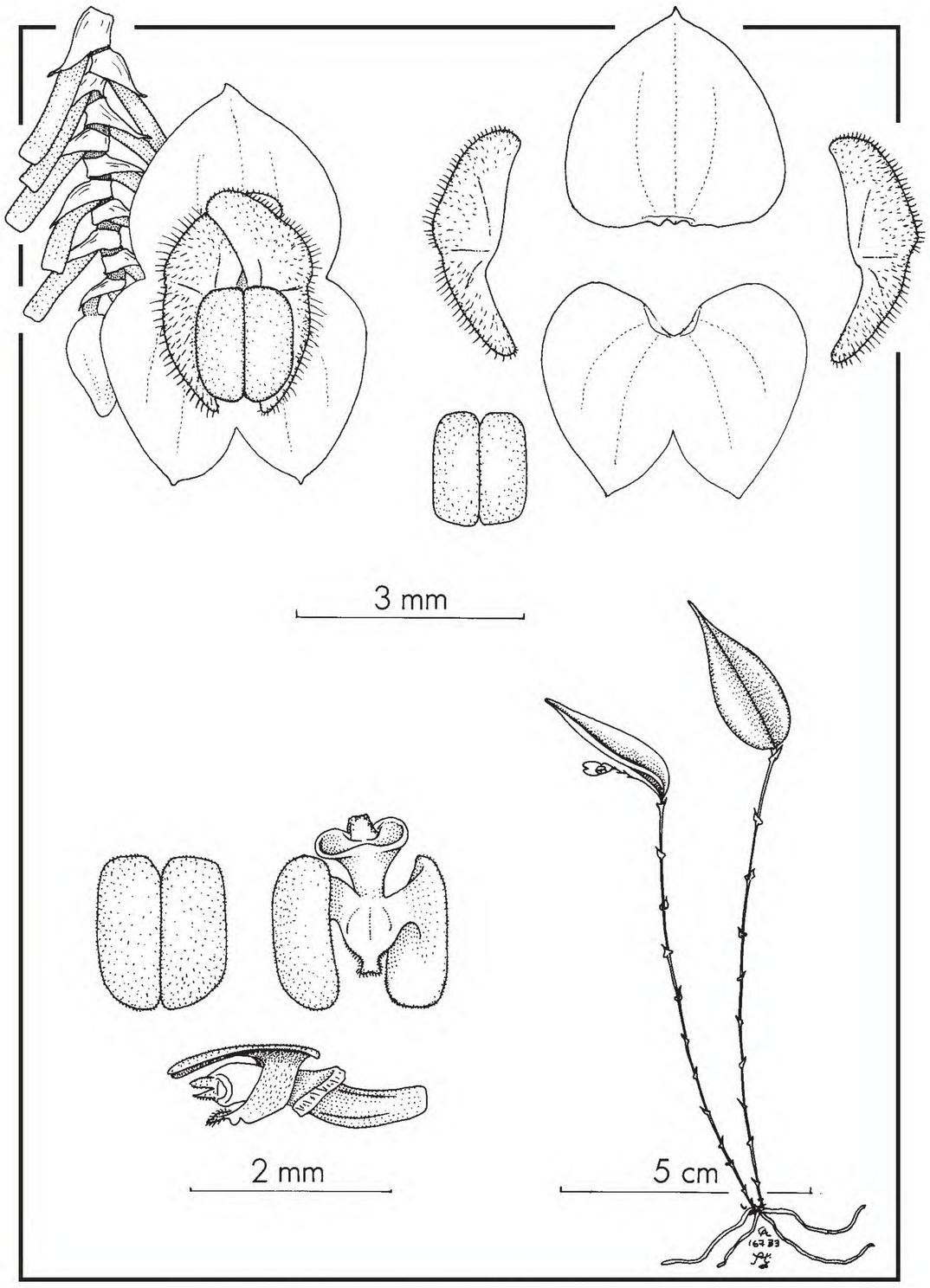



Fig. 46. Lepanthes caesariata

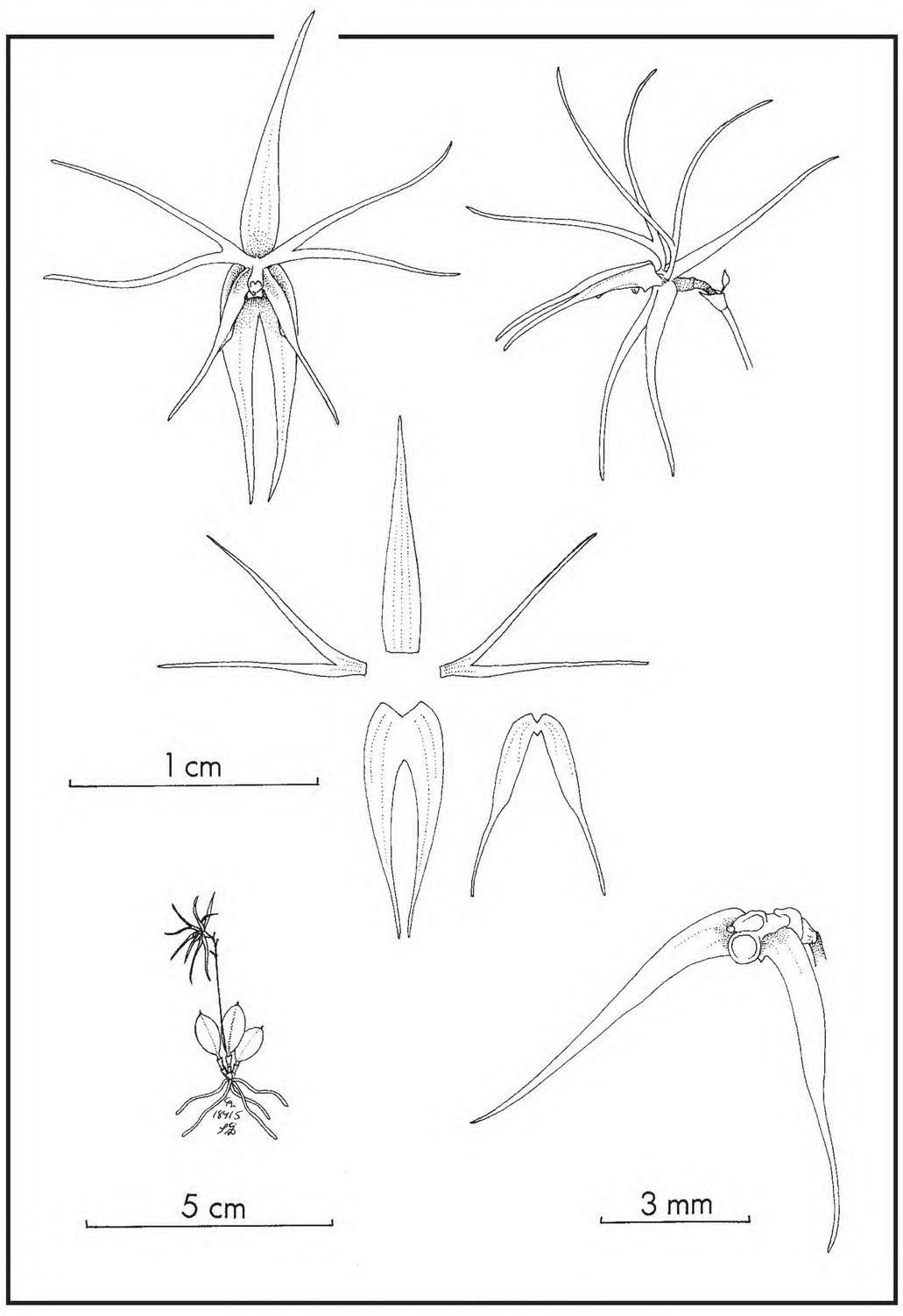



Fig. 47. Lepanthes calimae

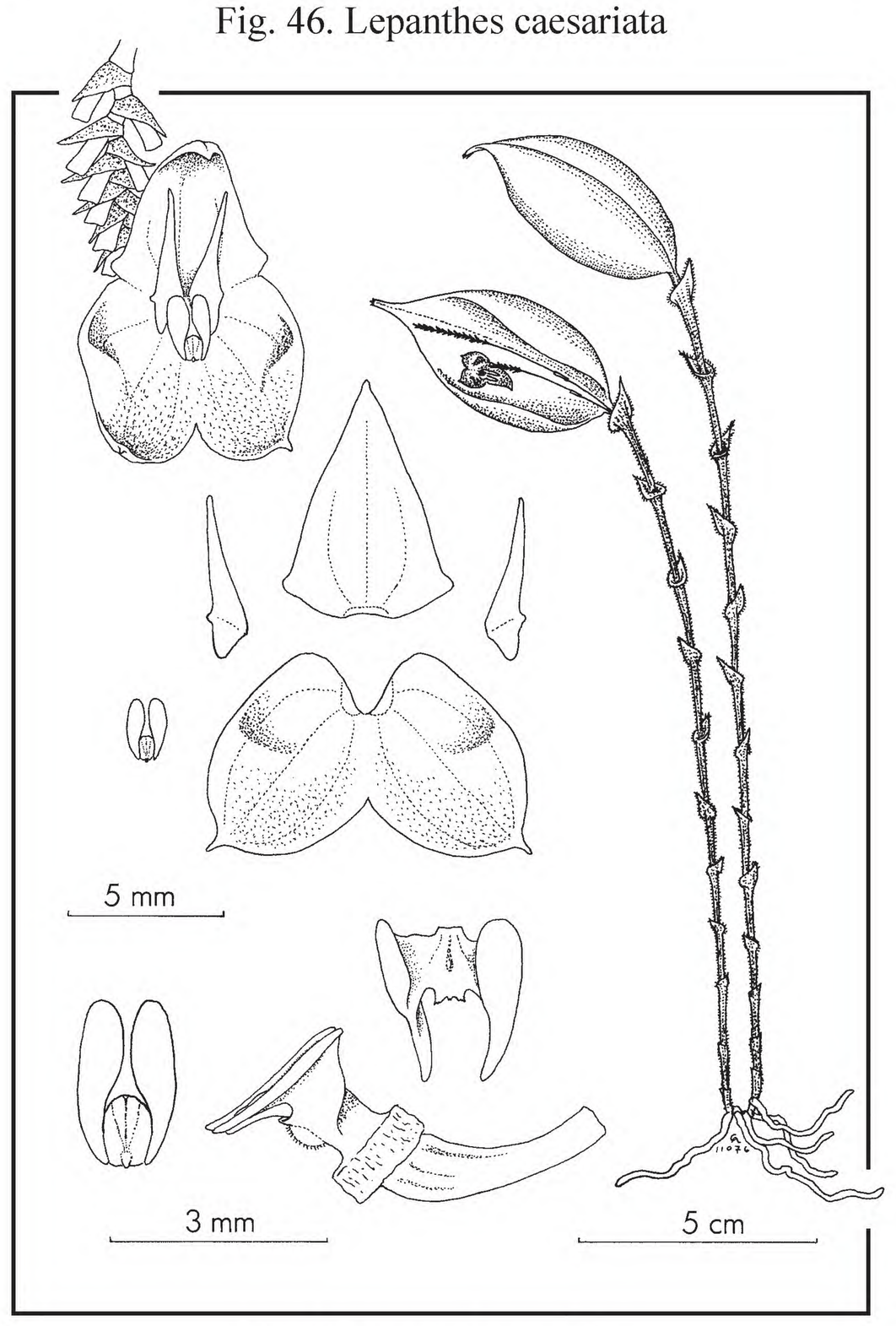



Fig. 48. Lepanthes callisto

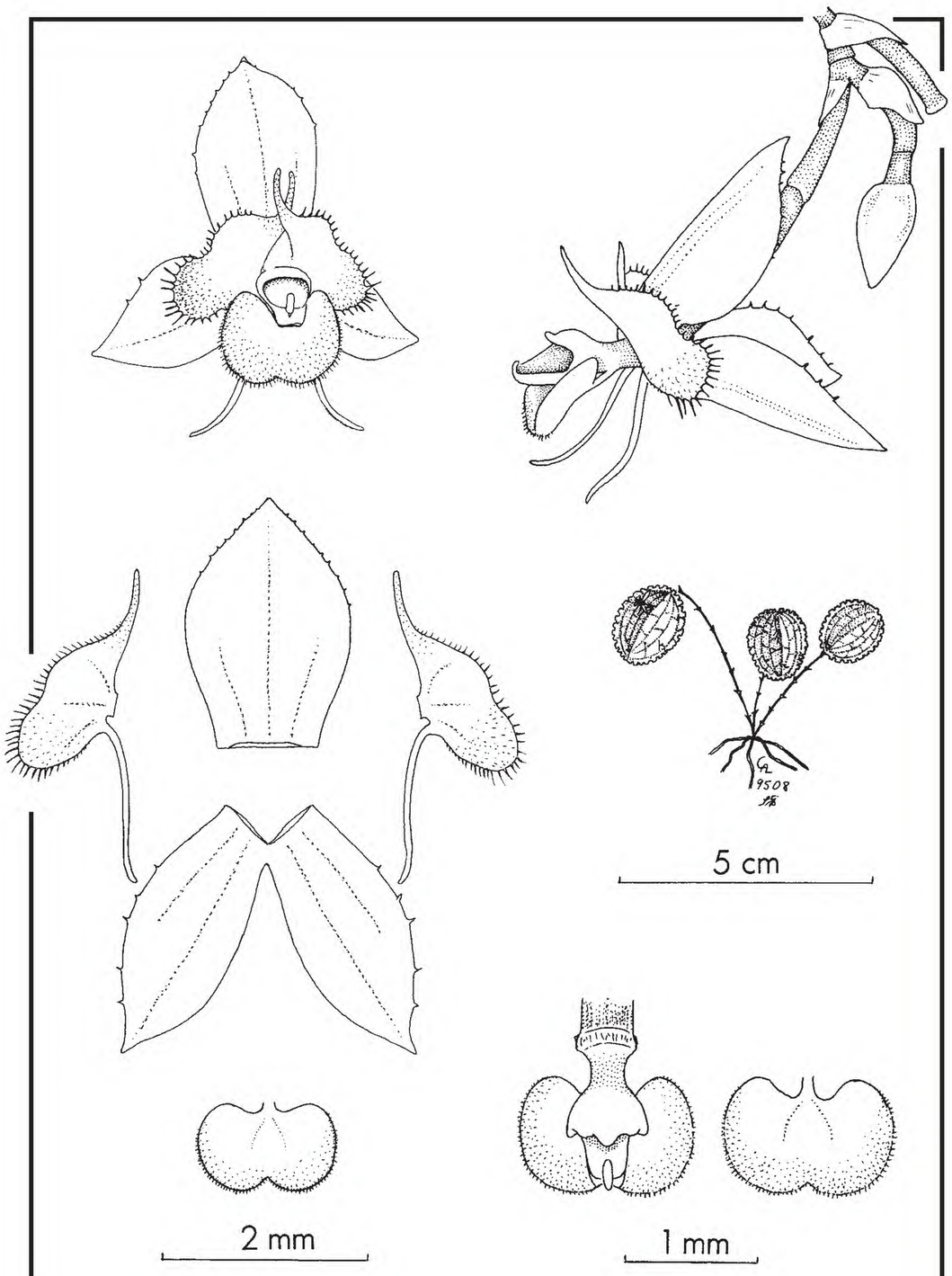



Fig. 49. Lepanthes calodictyon

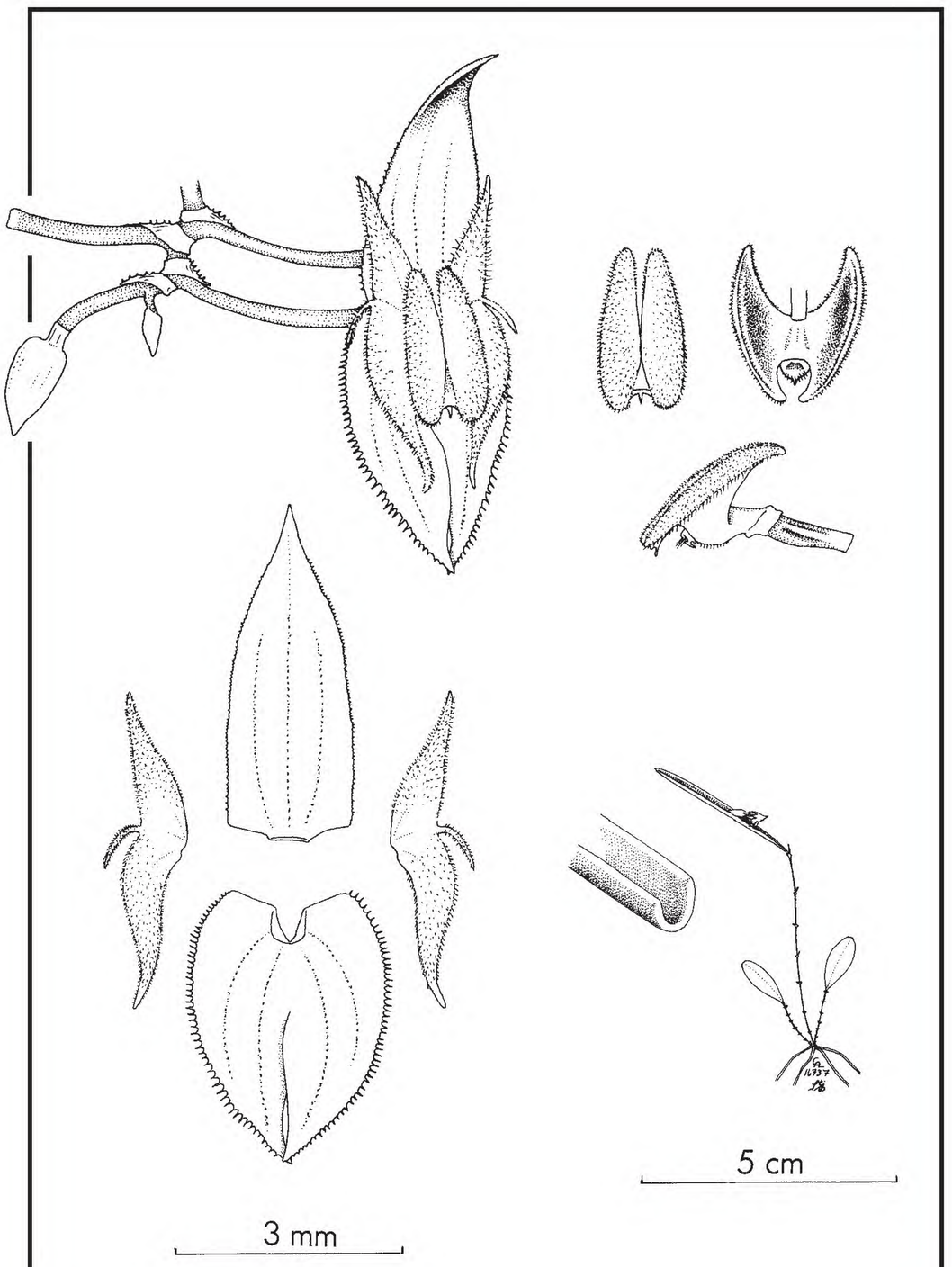



Fig. 50. Lepanthes canaliculata

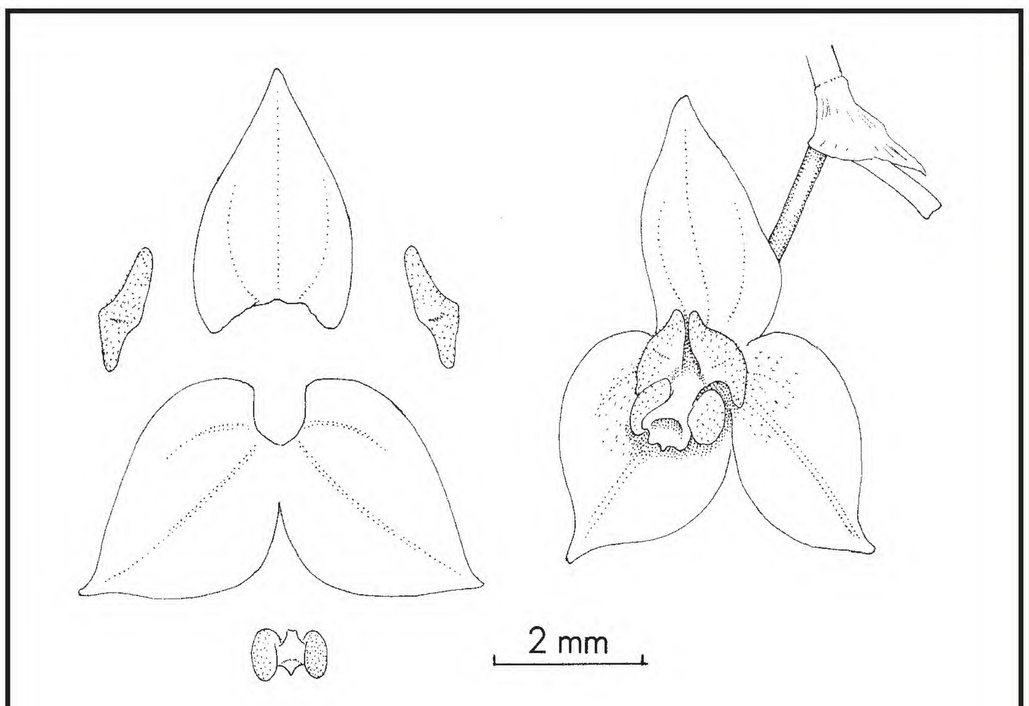



Fig. 51. Lepanthes carrilloi

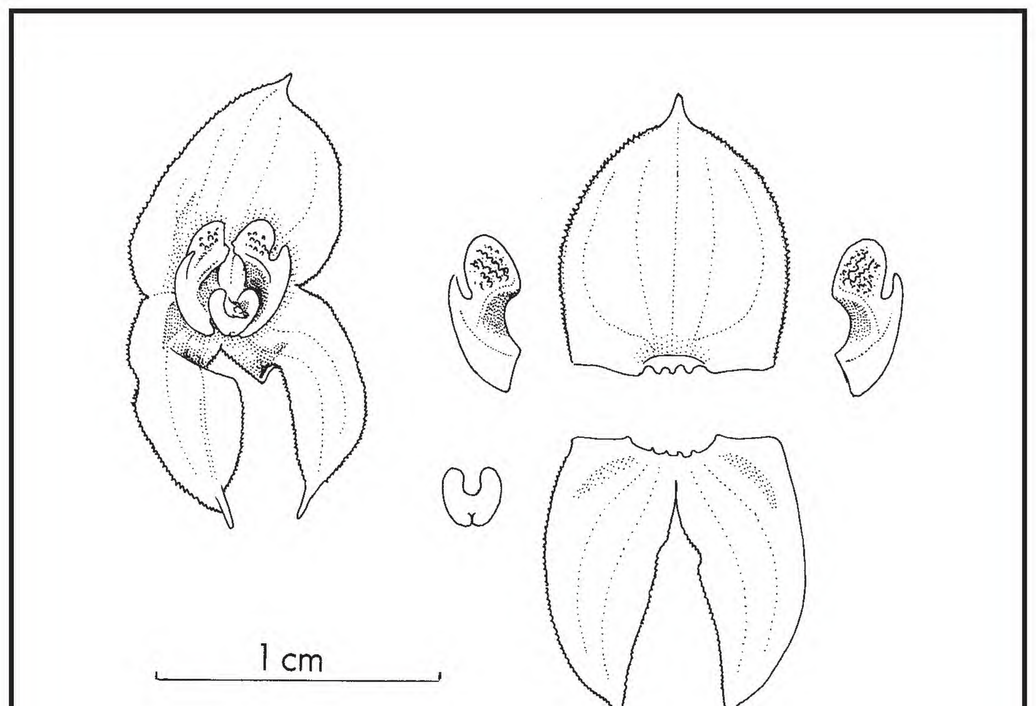



Fig. 52. Lepanthes carunculigera

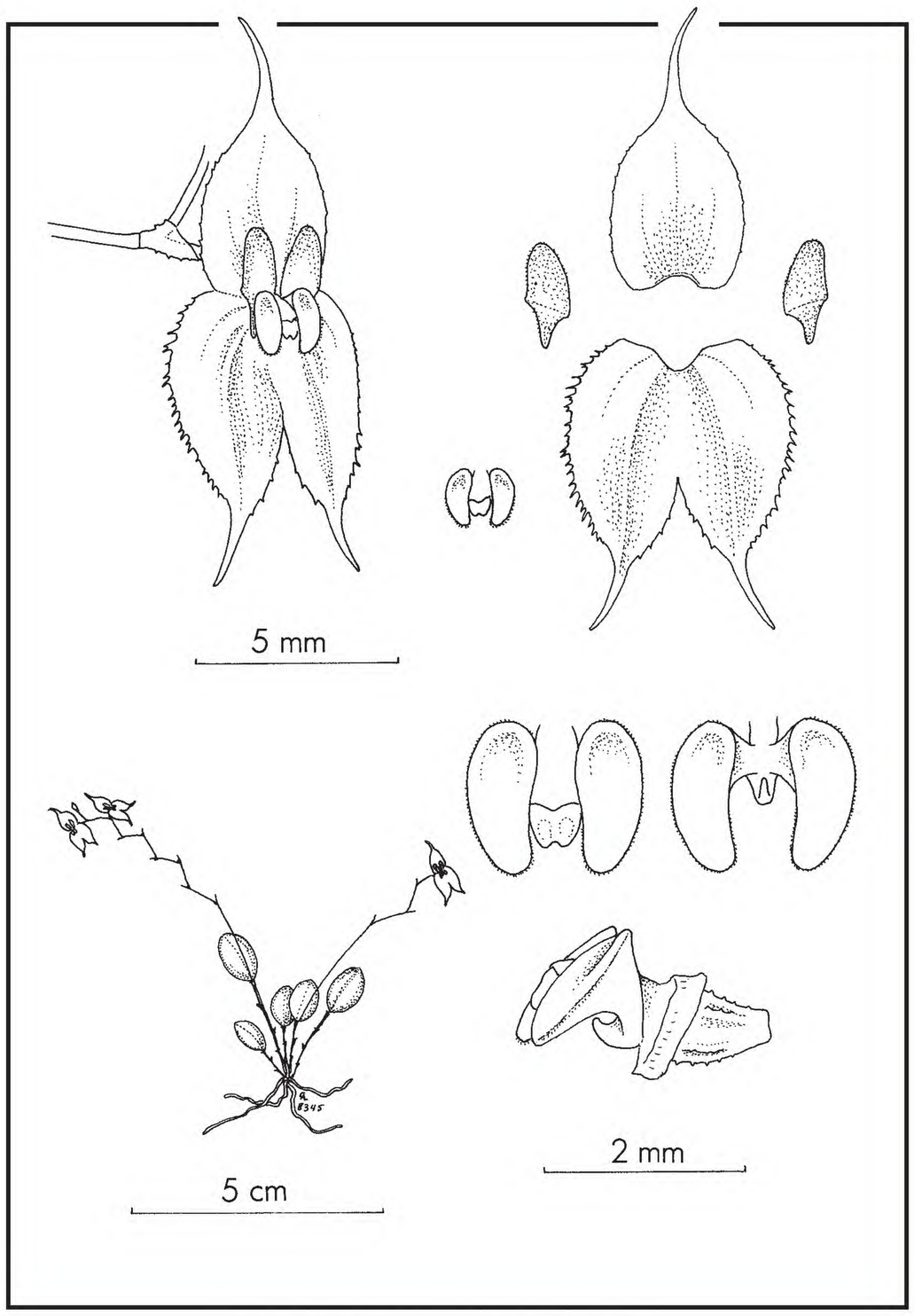



Fig. 53. Lepanthes caudata

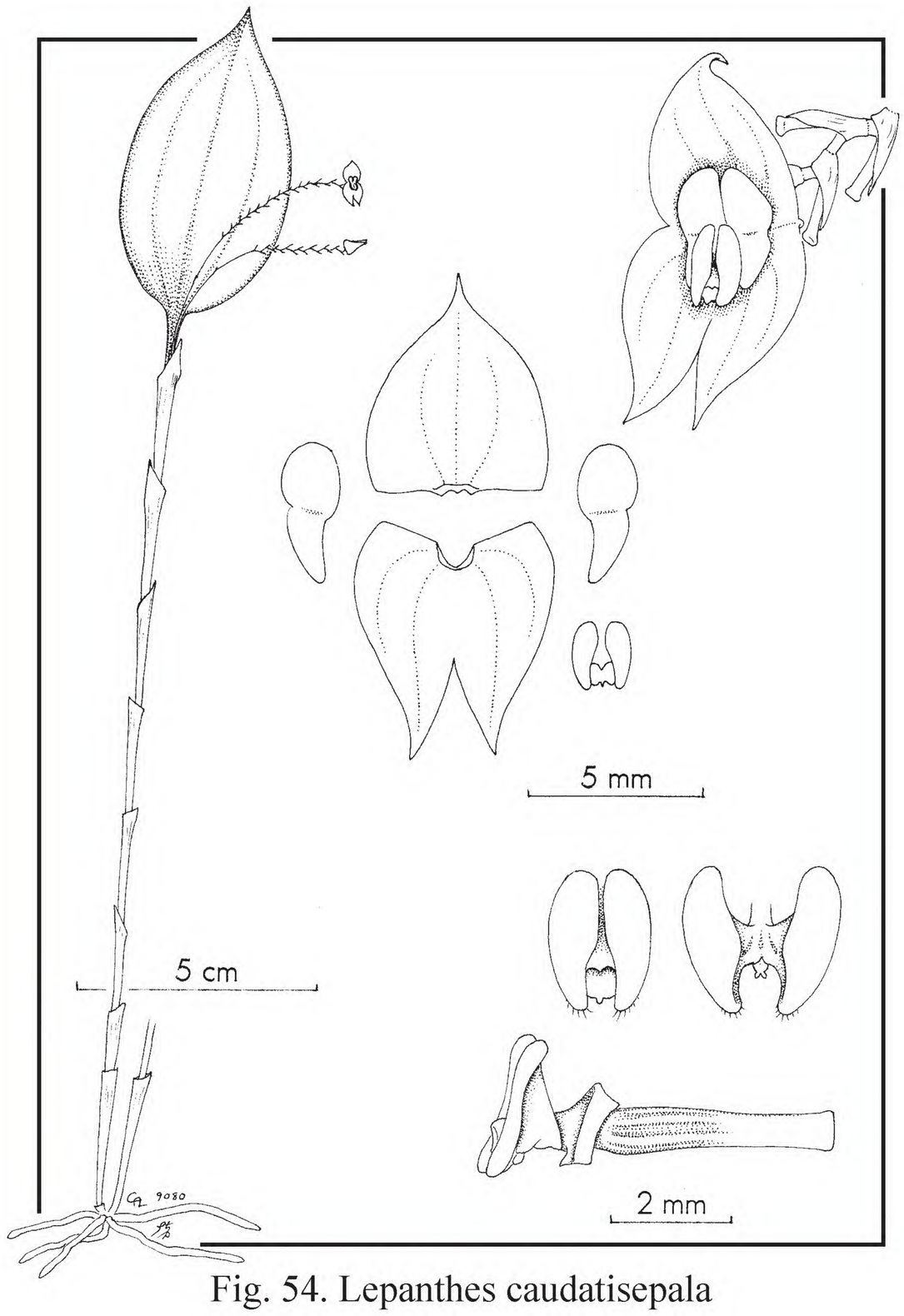



Fig. 54. Lepanthes caudatisepala

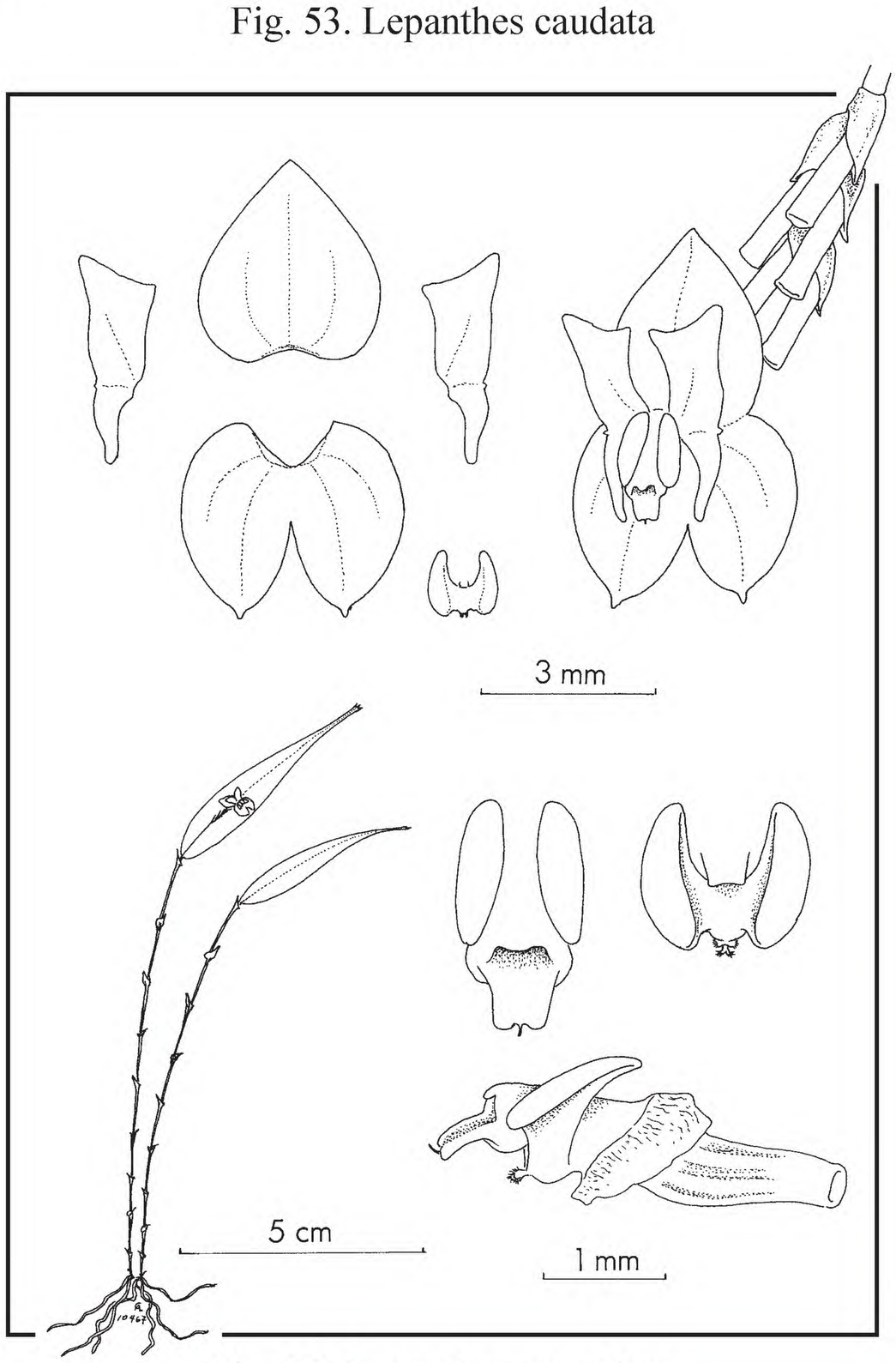



Fig. 55. Lepanthes cerambyx

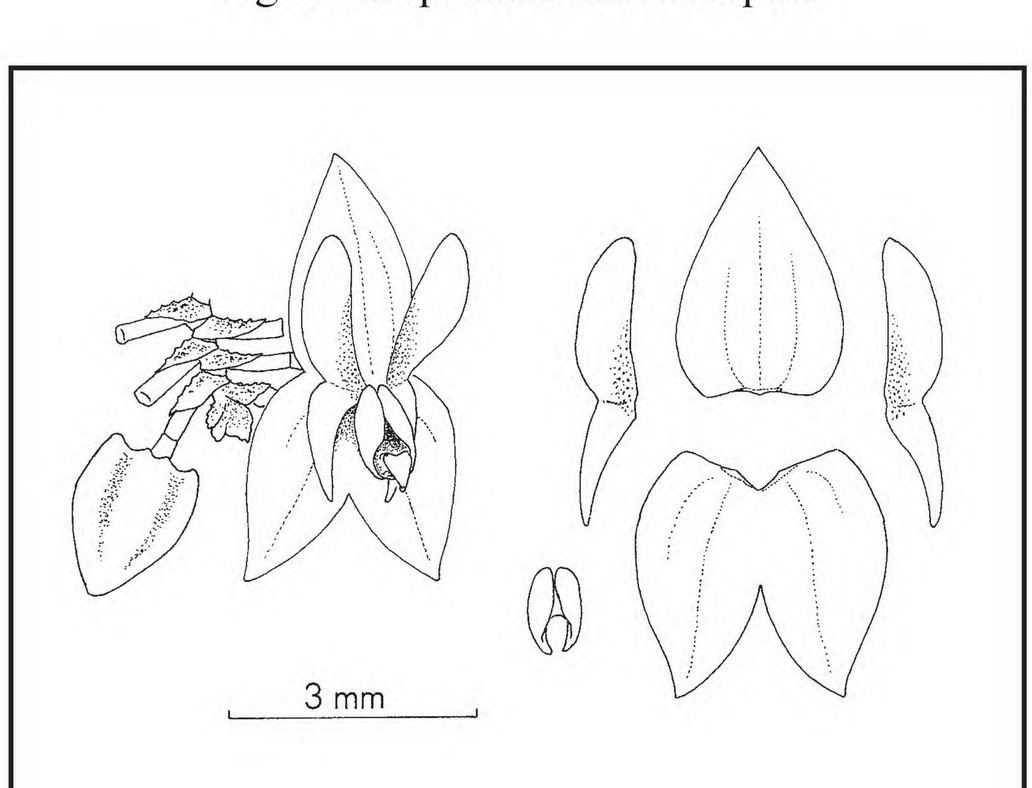



Fig. 56. Lepanthes cercion

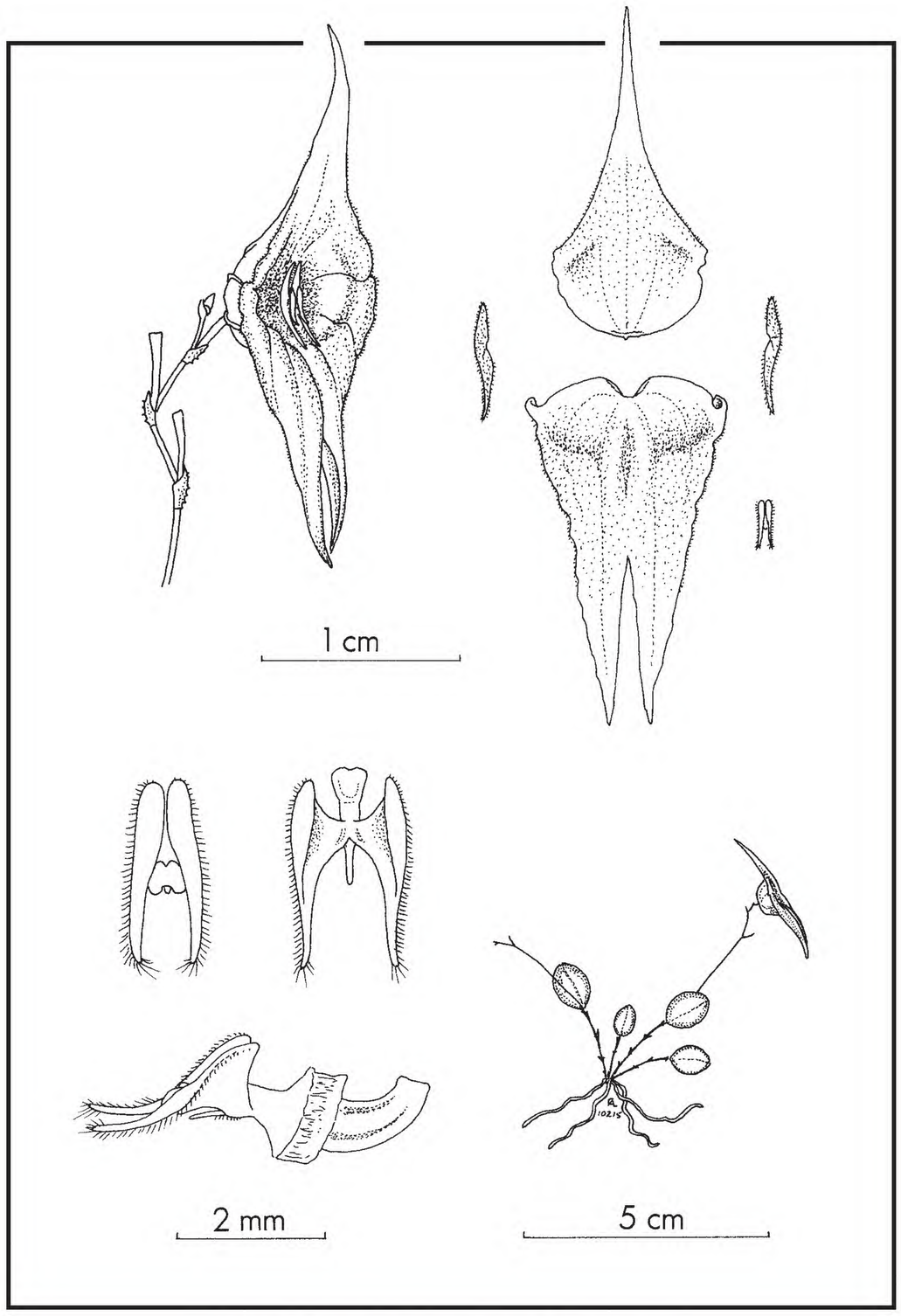



Fig. 57. Lepanthes chelonion

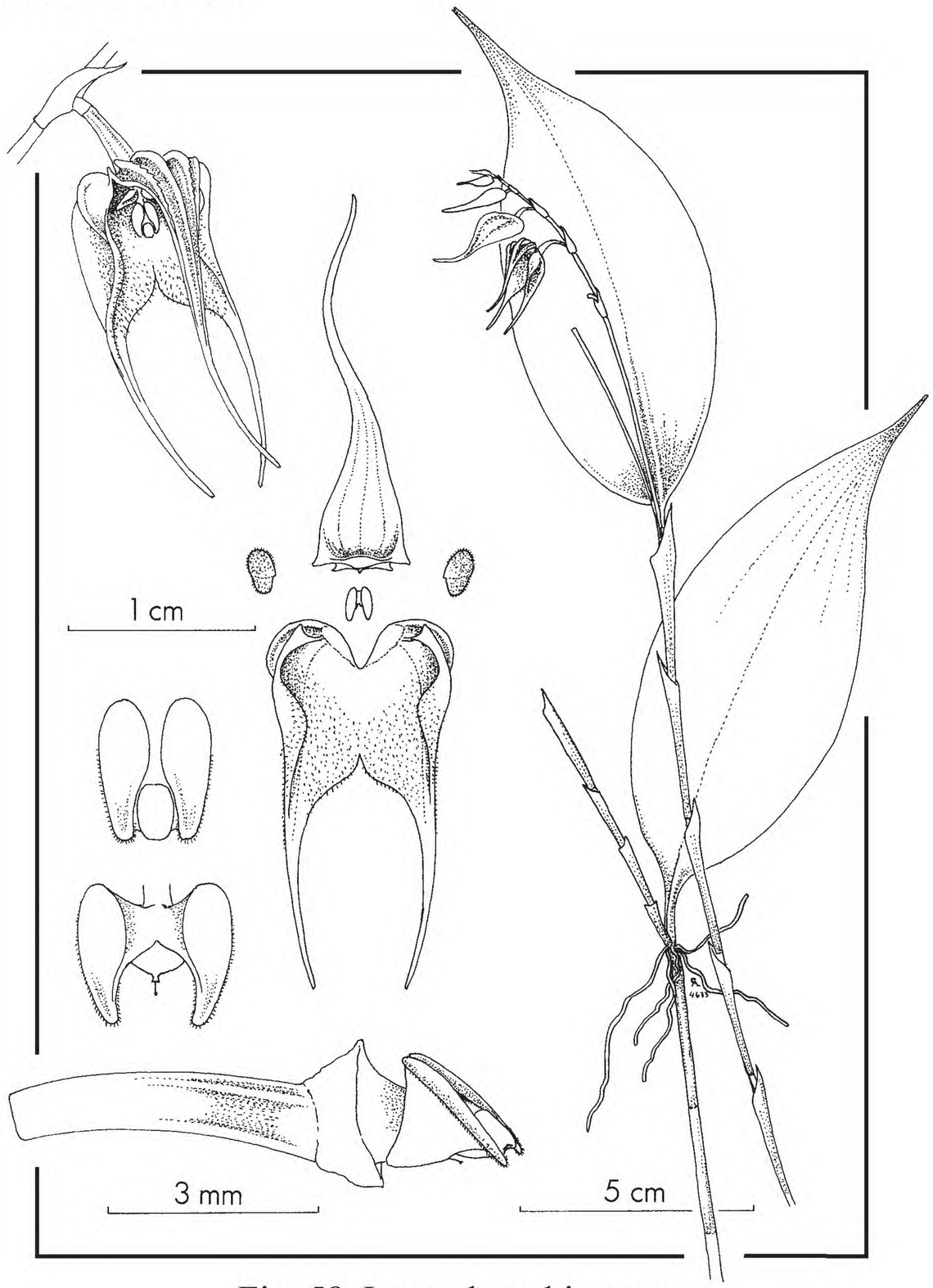



Fig. 58. Lepanthes chimaera

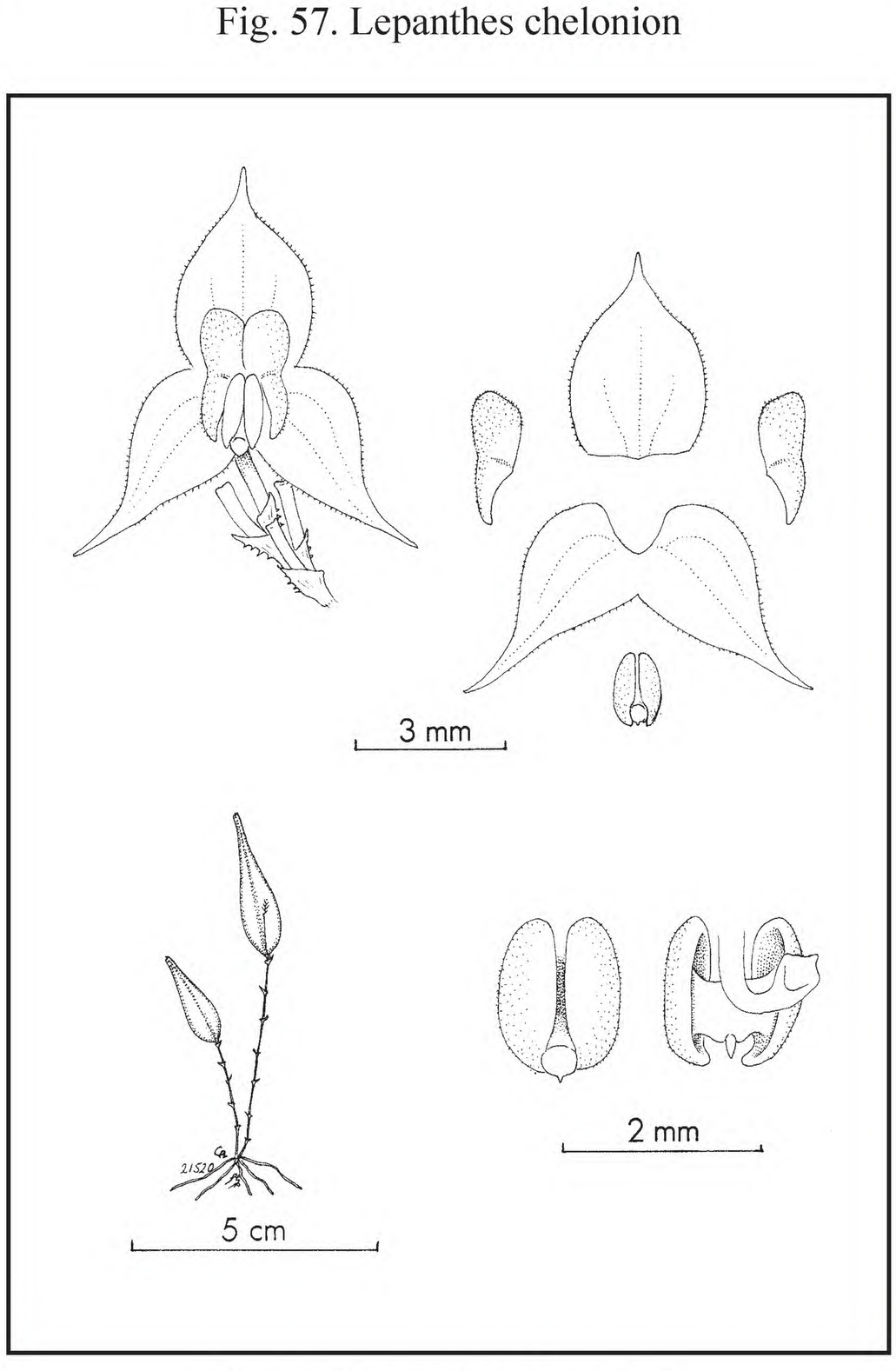



Fig. 59. Lepanthes chocoënsis

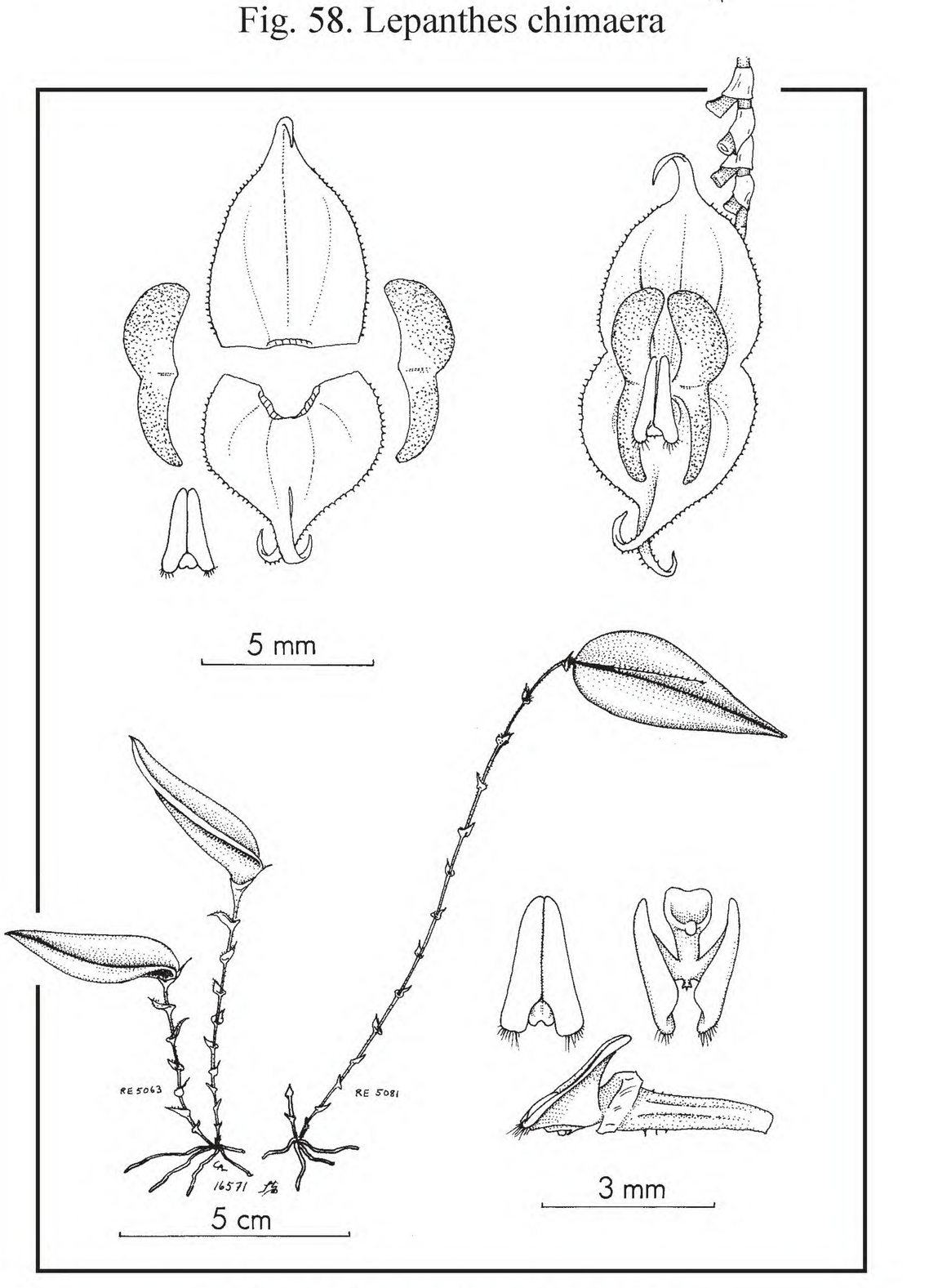



Fig. 60. Lepanthes cincinnata

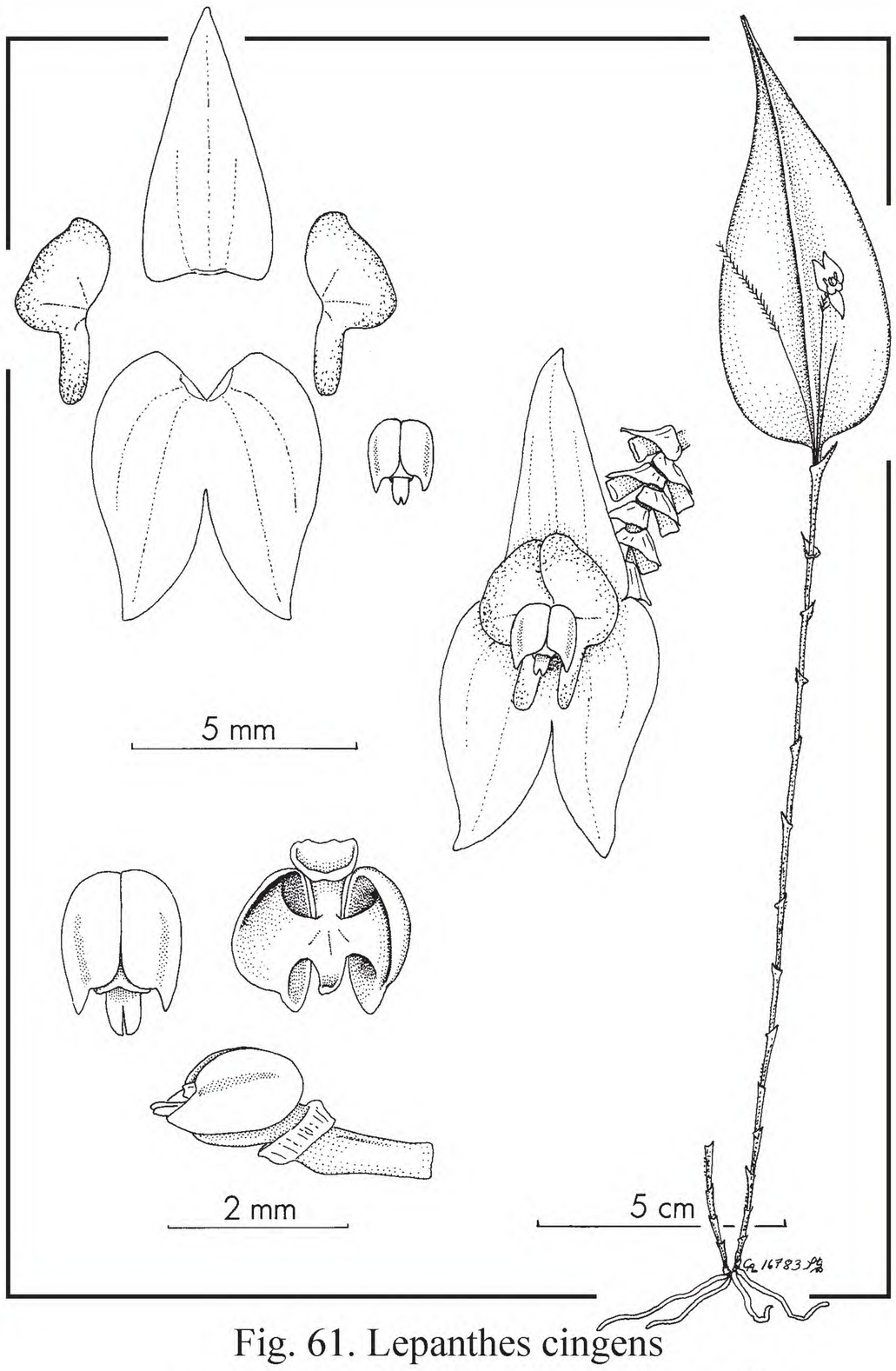



Fig. 61. Lepanthes cingens

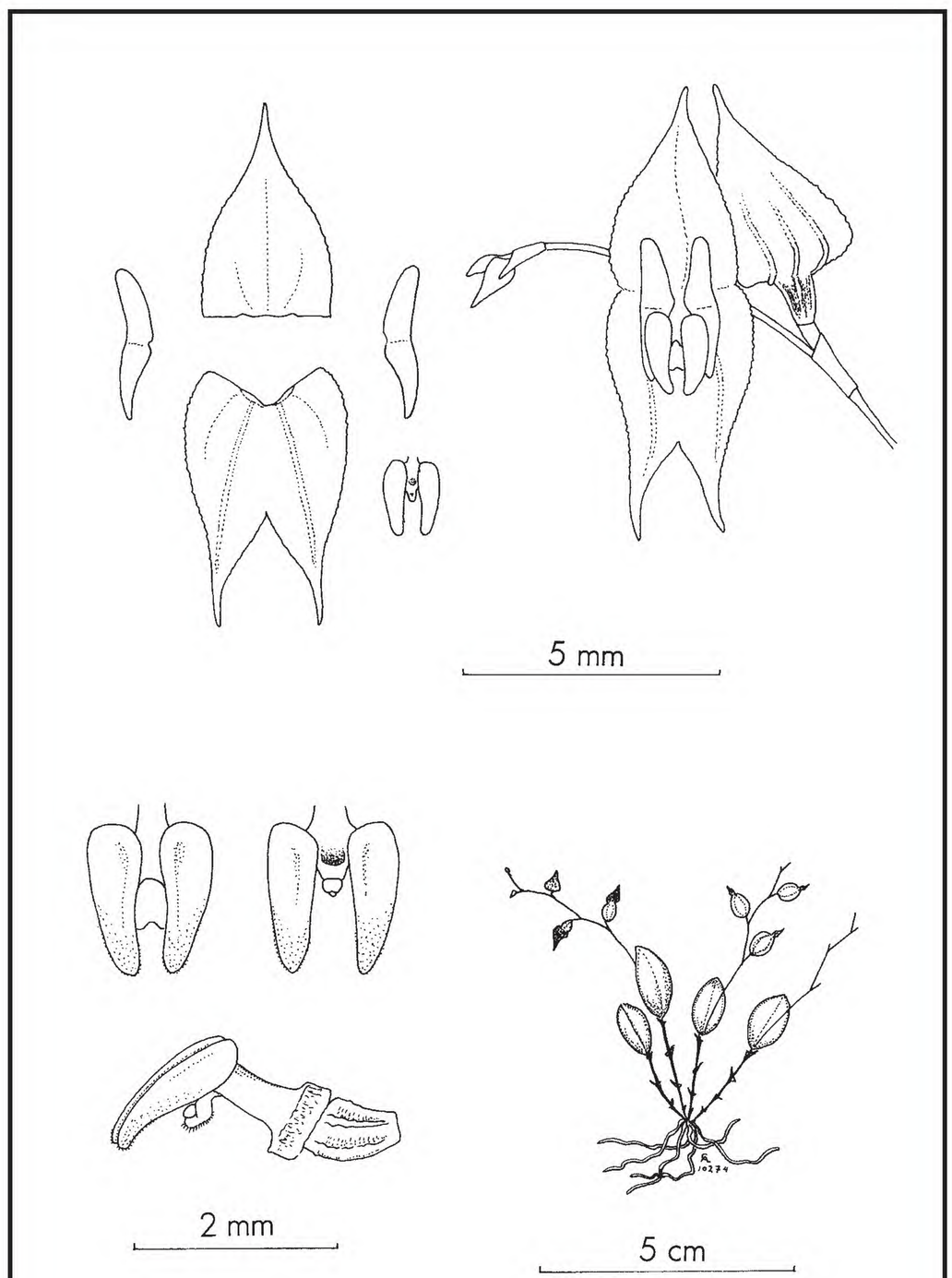



Fig. 62. Lepanthes clausa

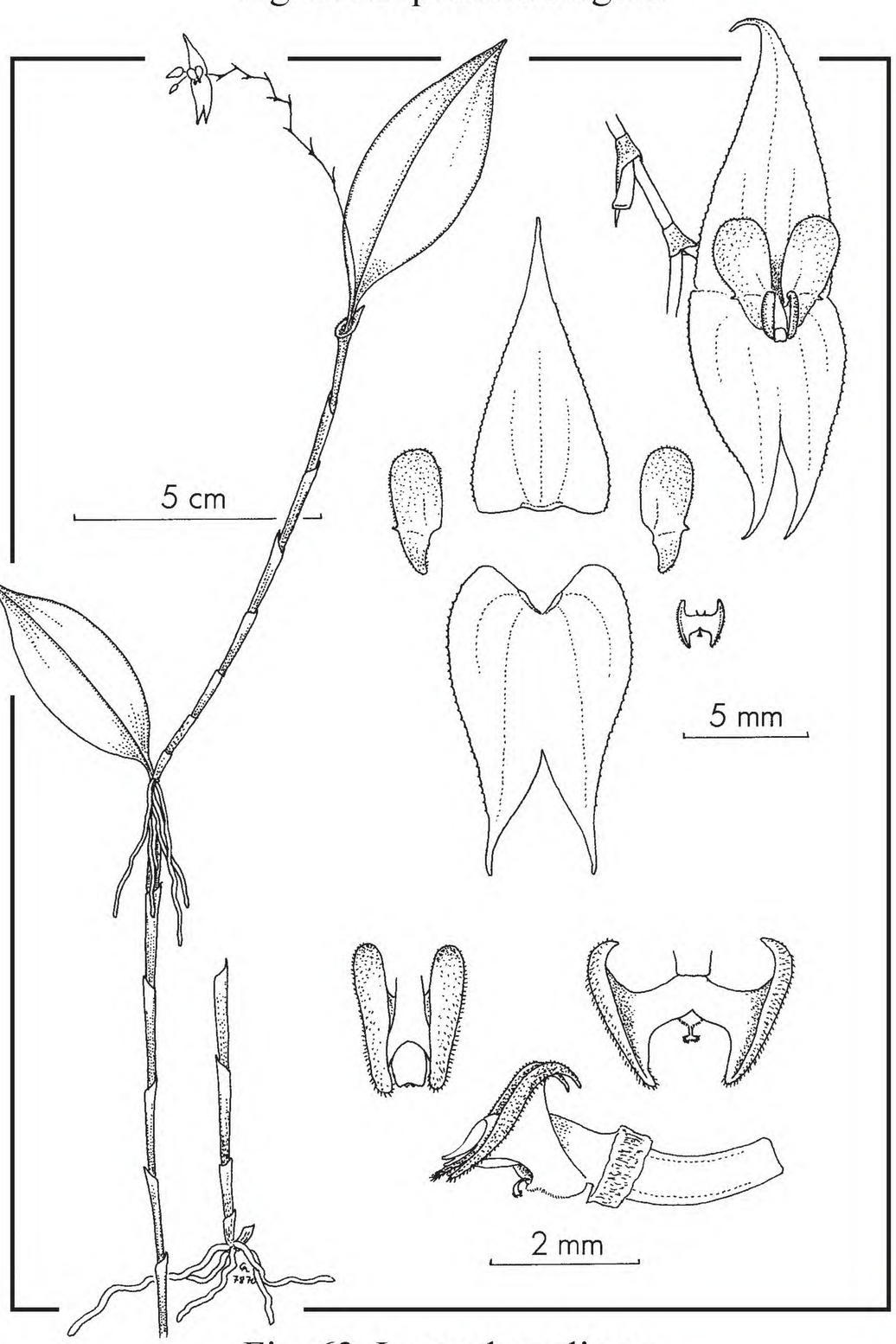



Fig. 63. Lepanthes climax

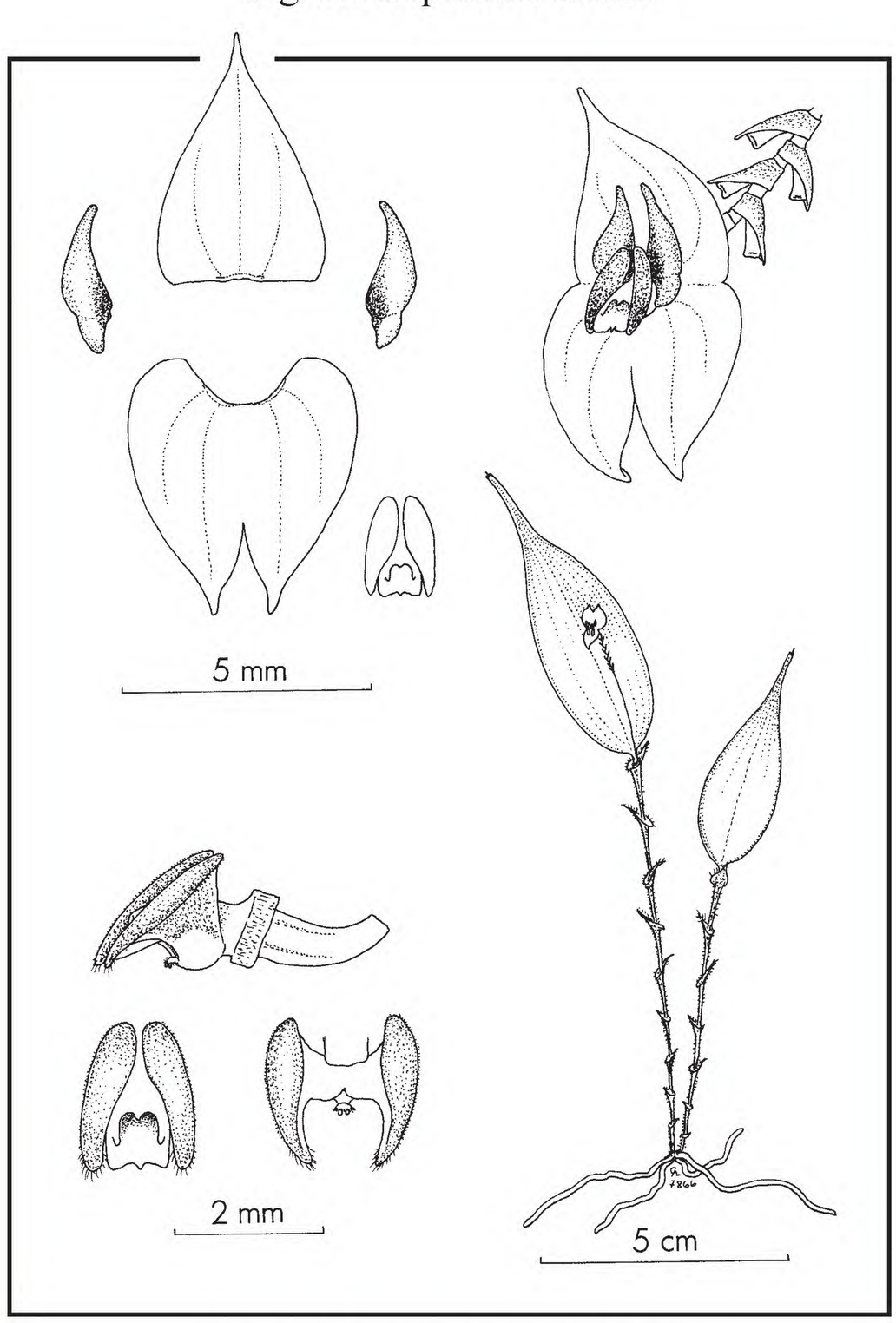



Fig. 64. Lepanthes cocculifera

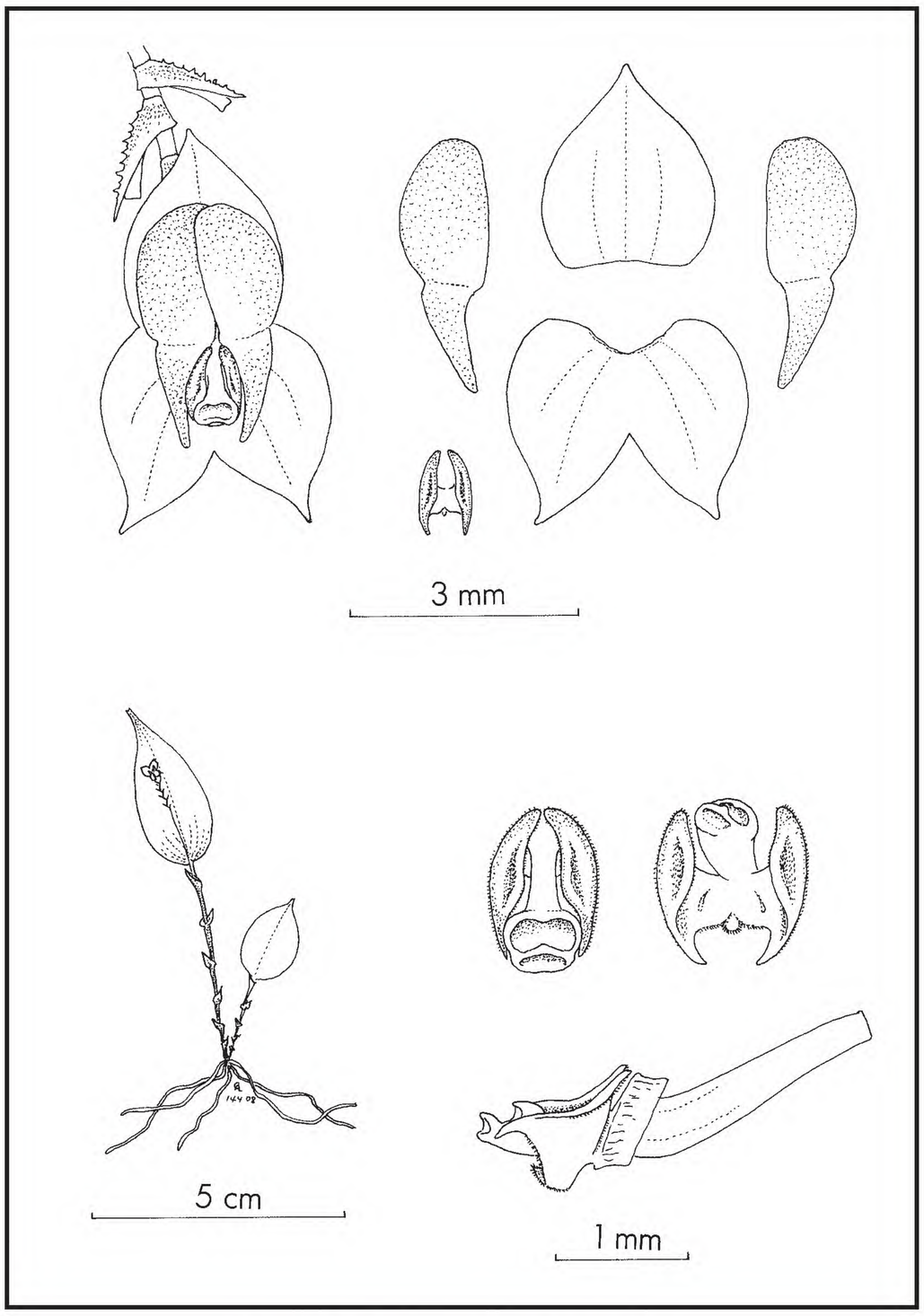



Fig. 65. Lepanthes cogolloi

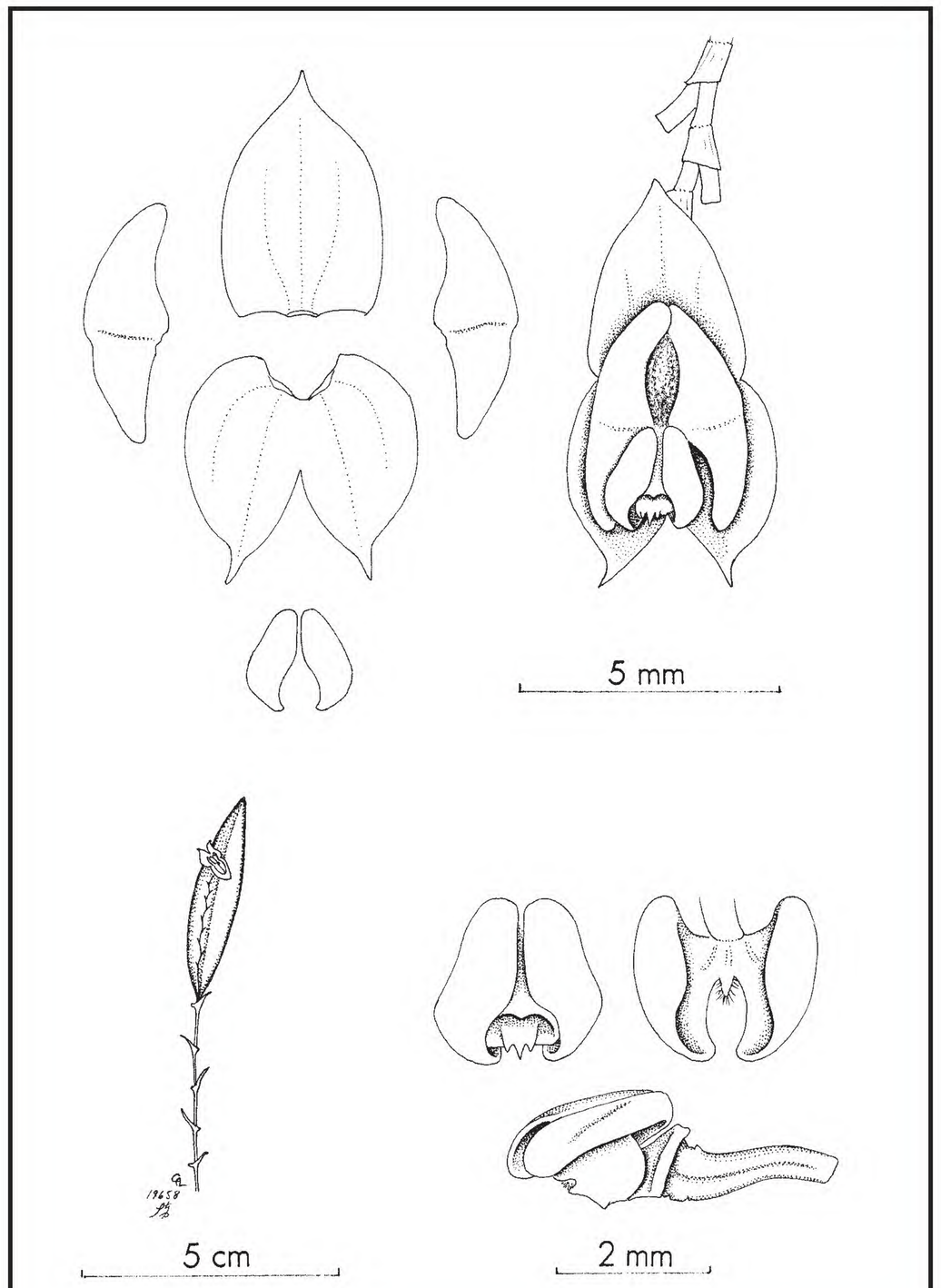



Fig. 66. Lepanthes conchyliata

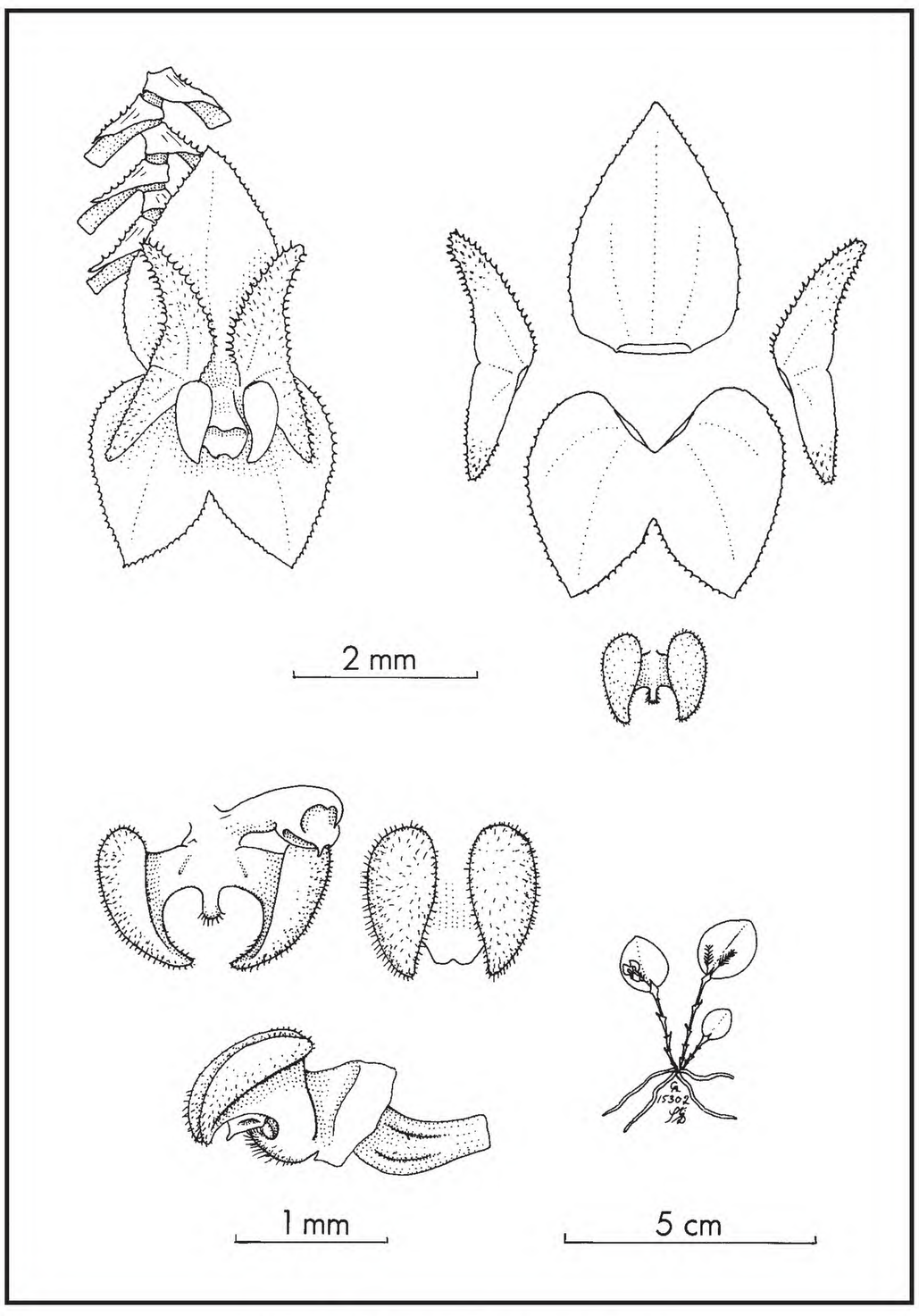



Fig. 67. Lepanthes confusa

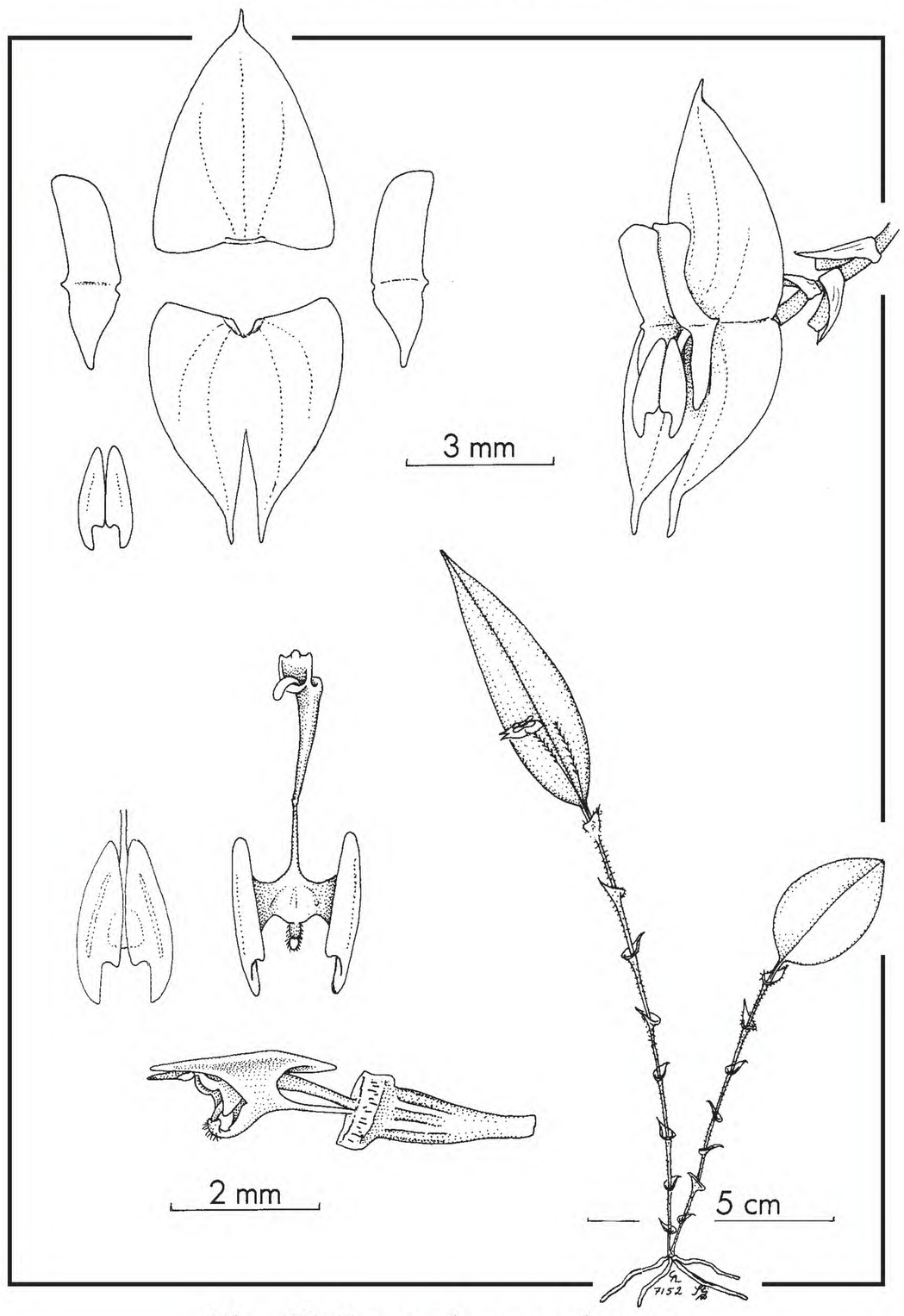



Fig. 68. Lepanthes contingens

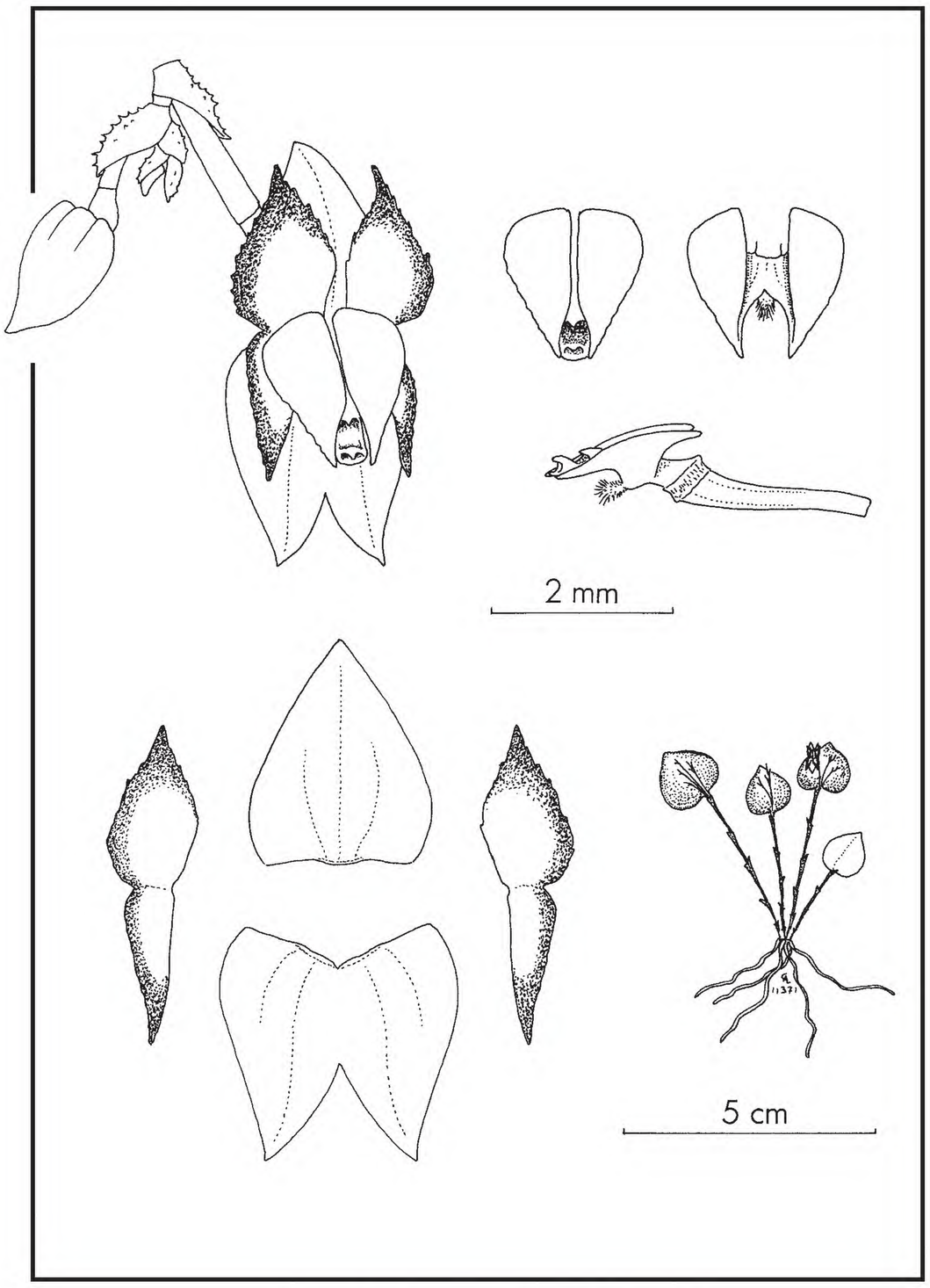



Fig. 69. Lepanthes cordata

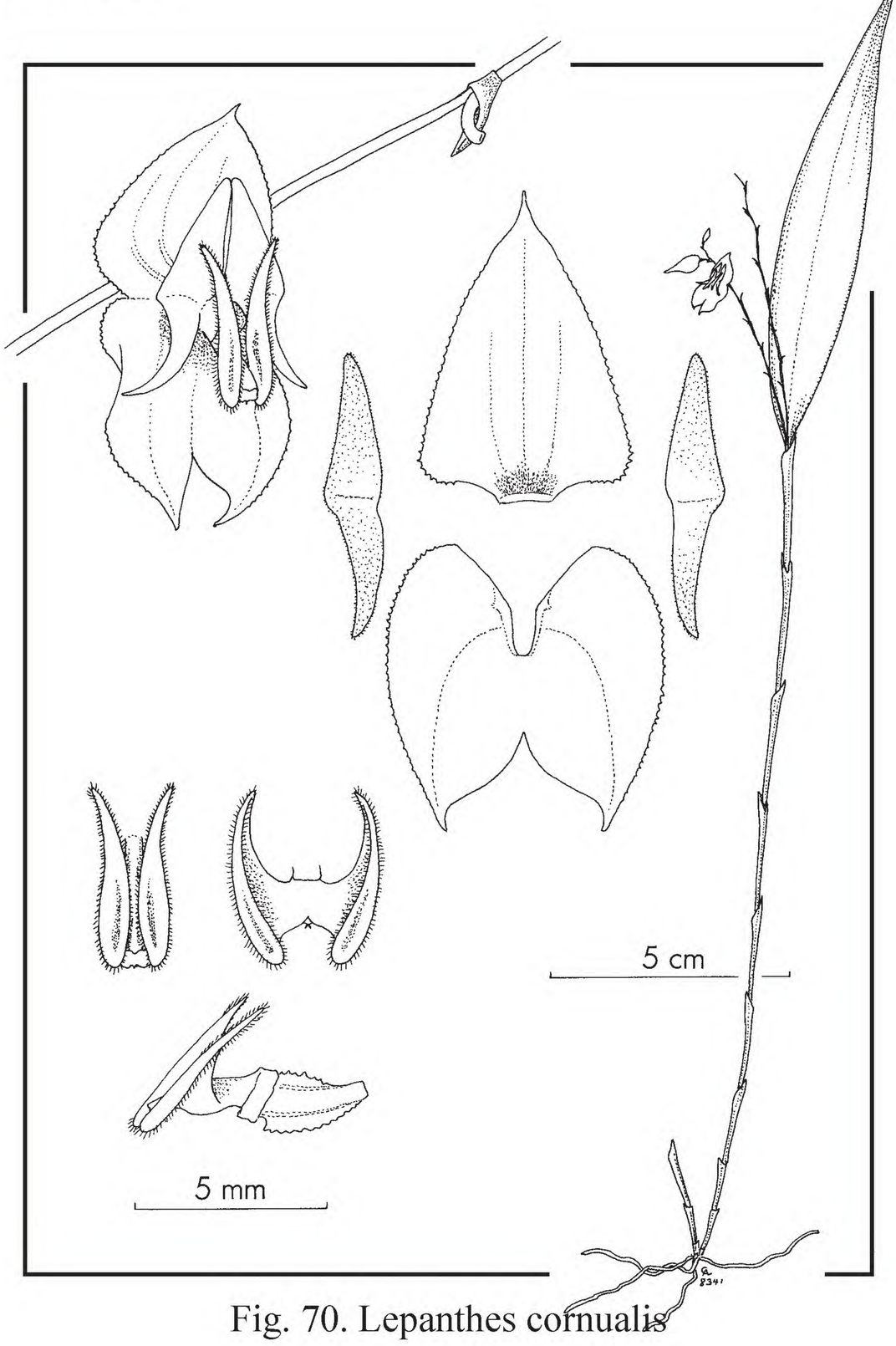



Fig. 70. Lepanthes cornualis

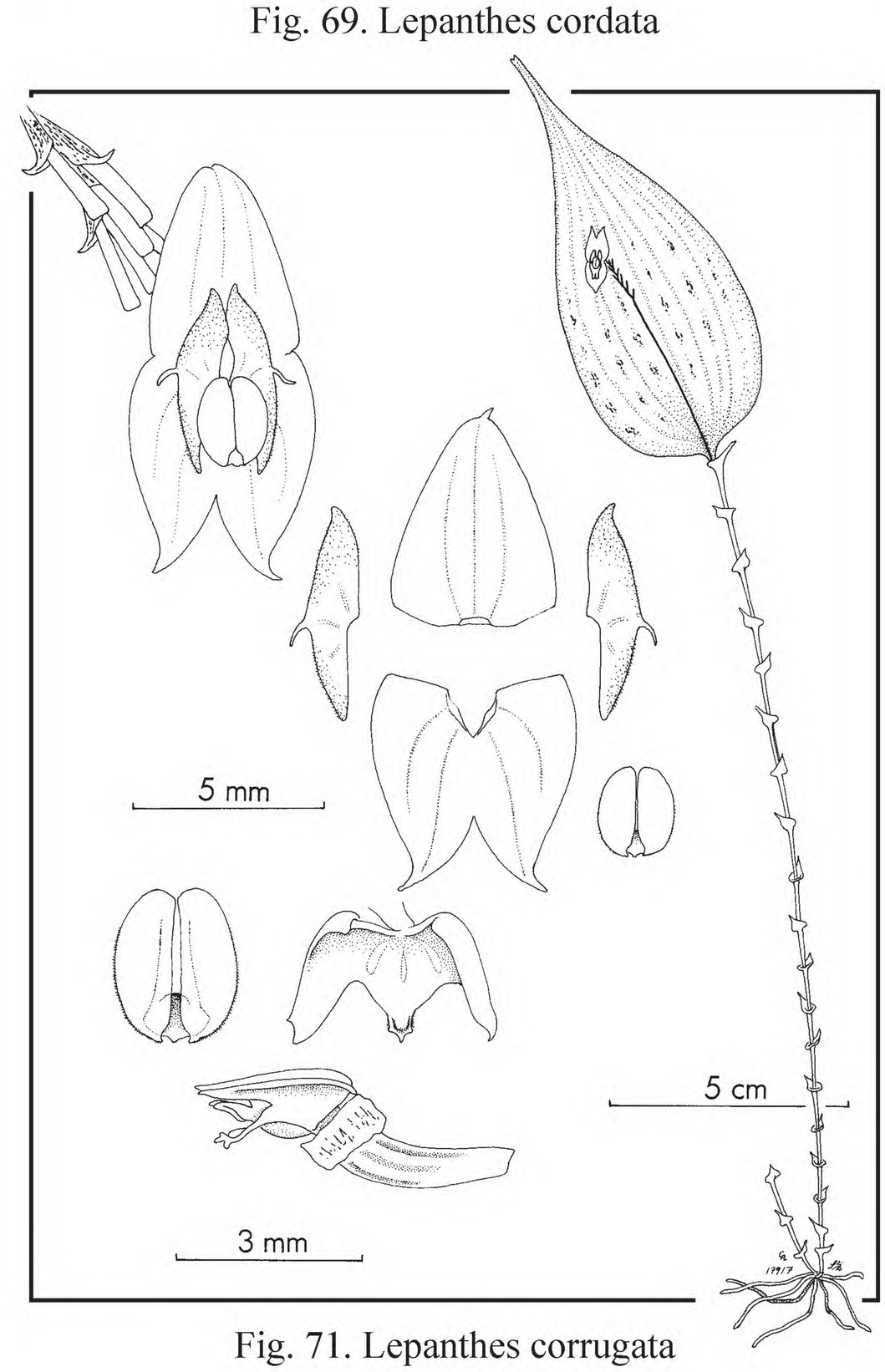



Fig. 71. Lepanthes corrugata

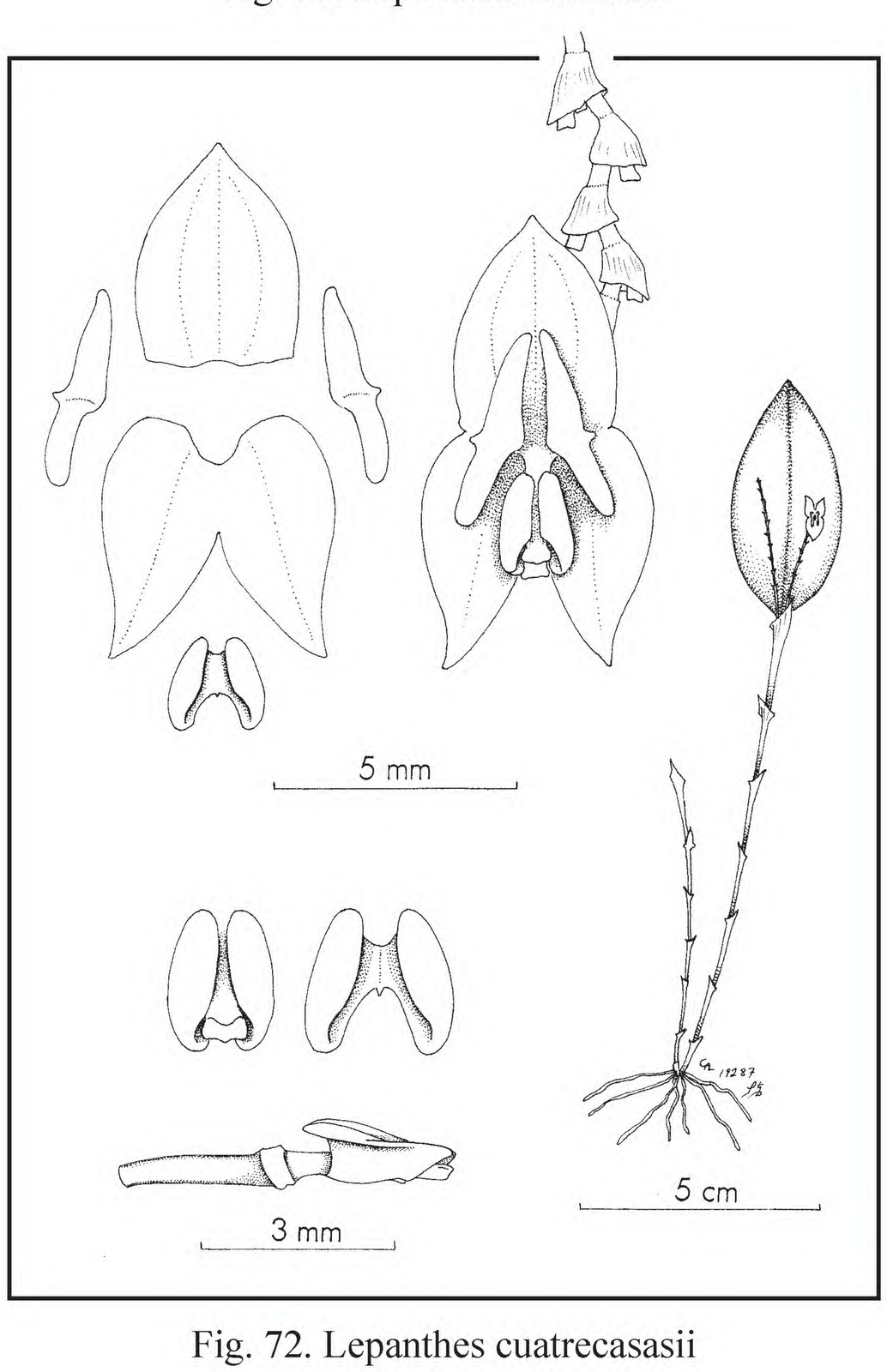



Fig. 72. Lepanthes cuatrecasasii

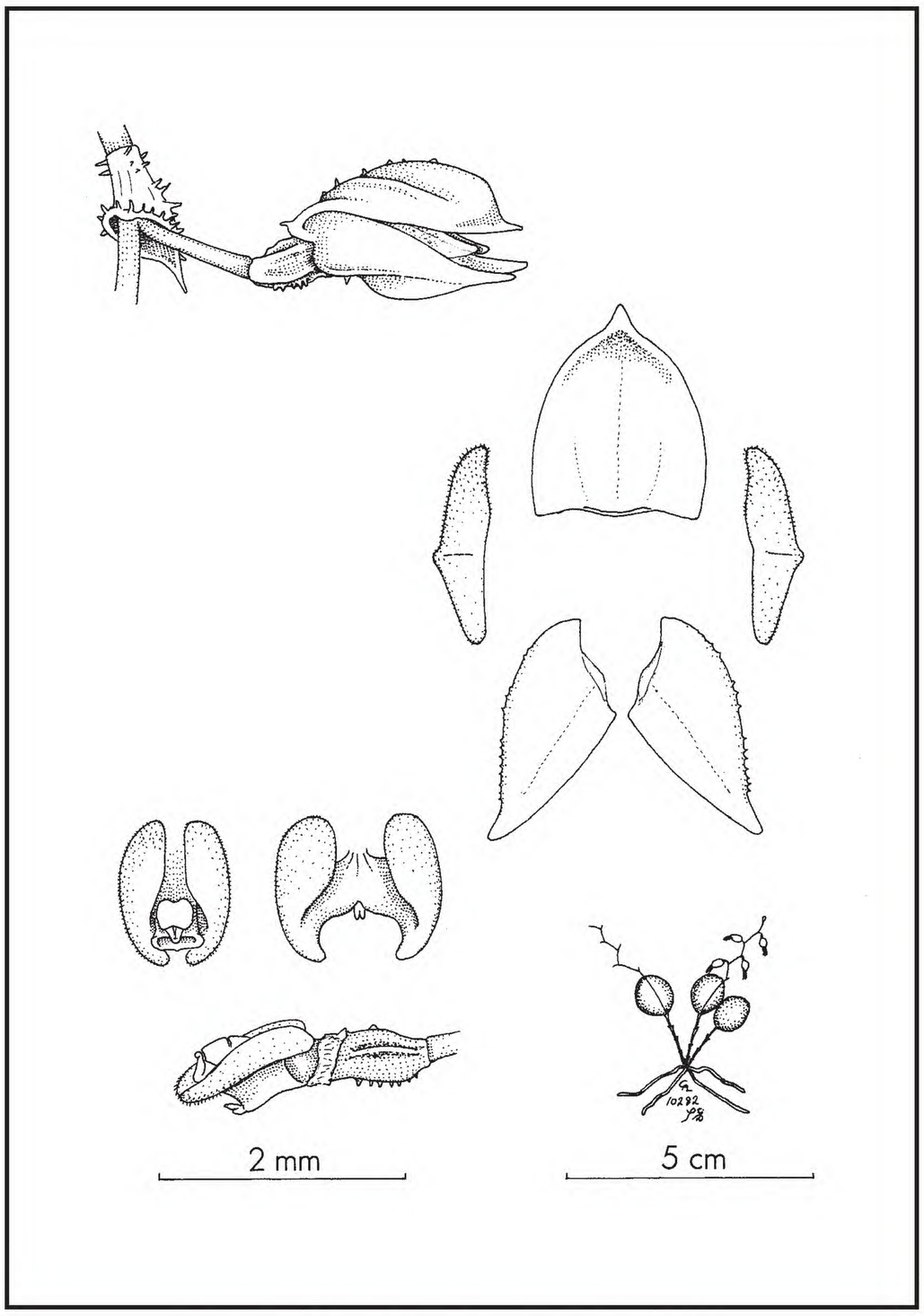



Fig. 73. Lepanthes cucullata

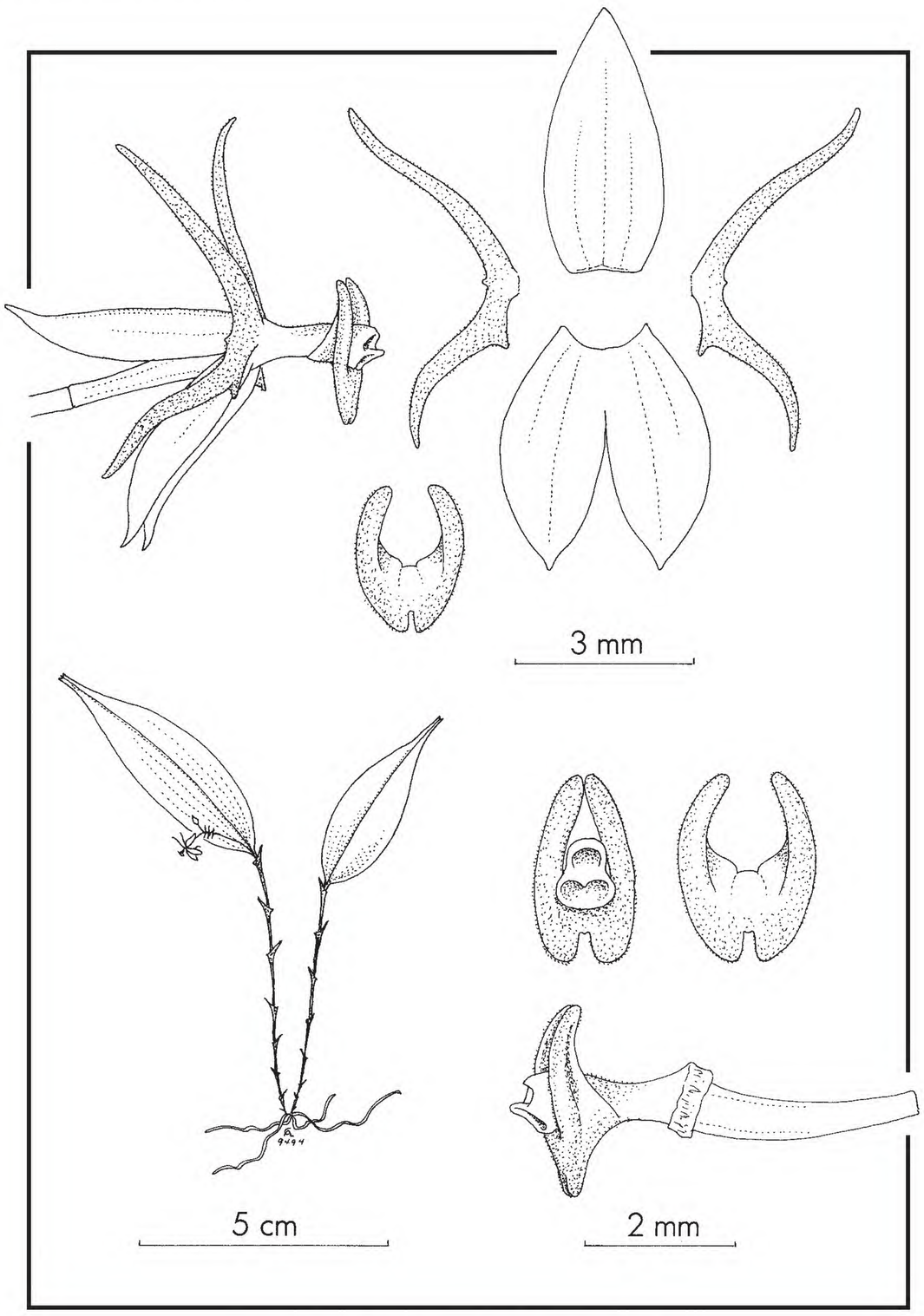



Fig. 74. Lepanthes culex

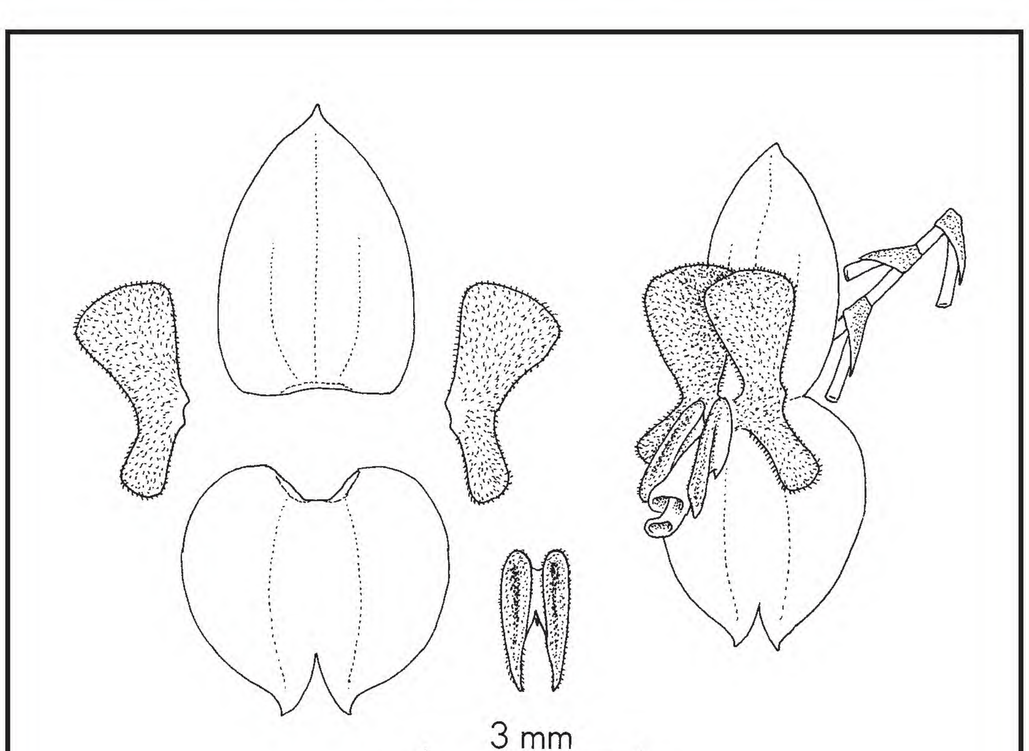



Fig. 75. Lepanthes cuneiformis

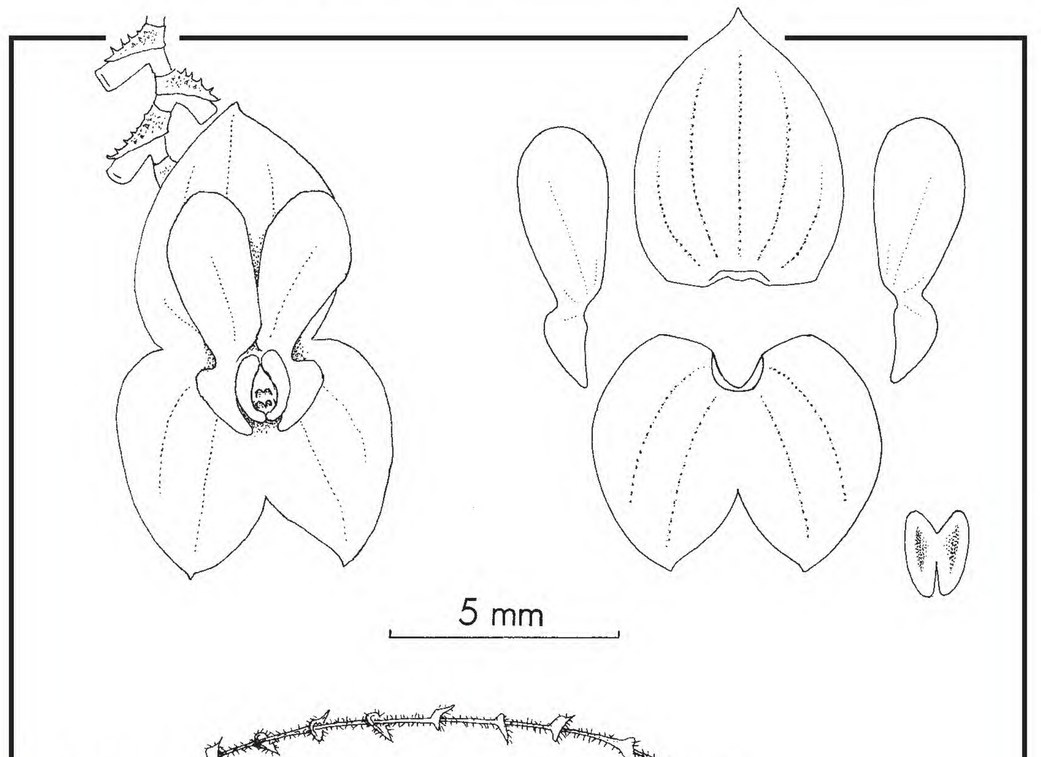



Fig. 76. Lepanthes cunicularis

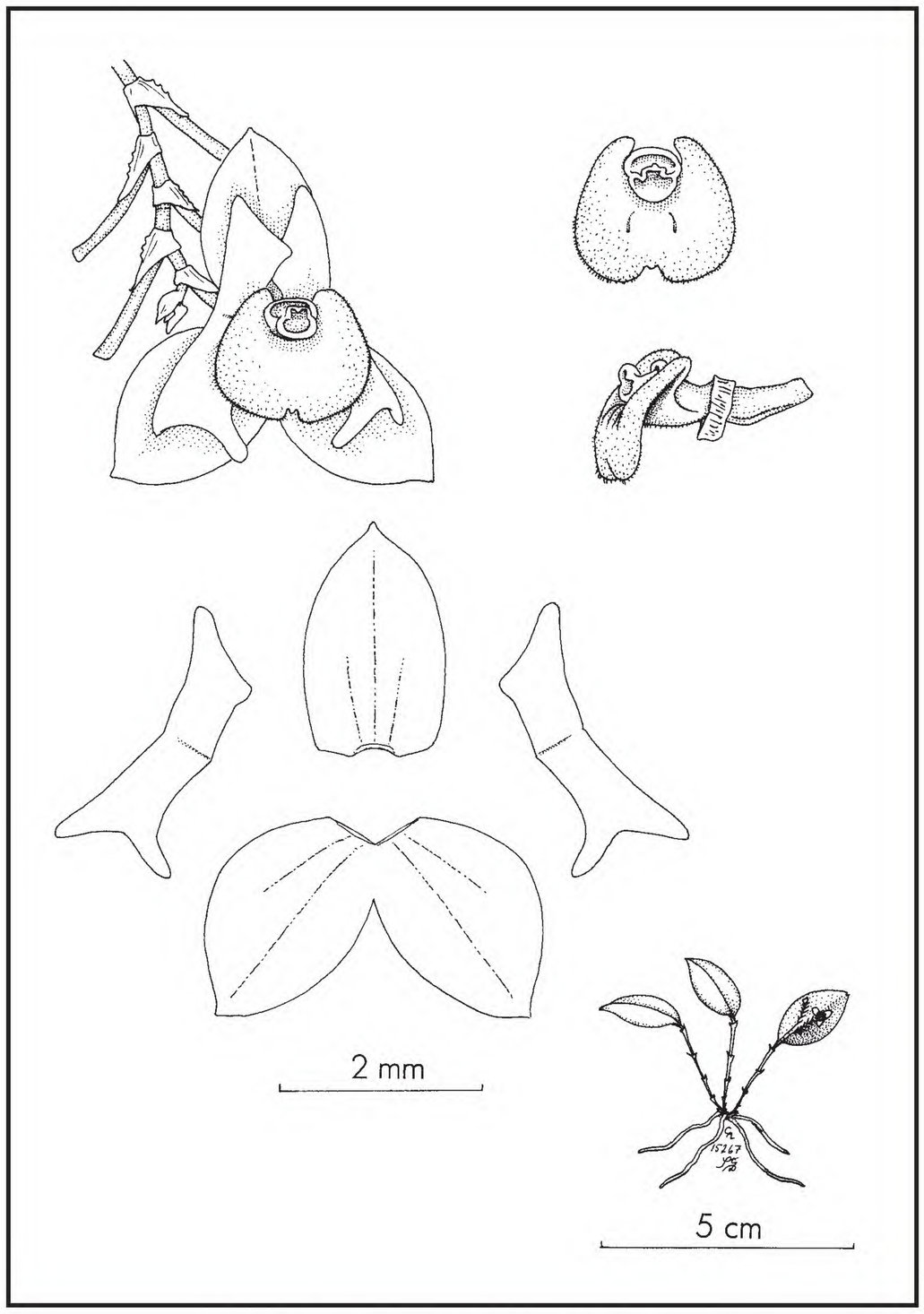



Fig. 77. Lepanthes cyclochila

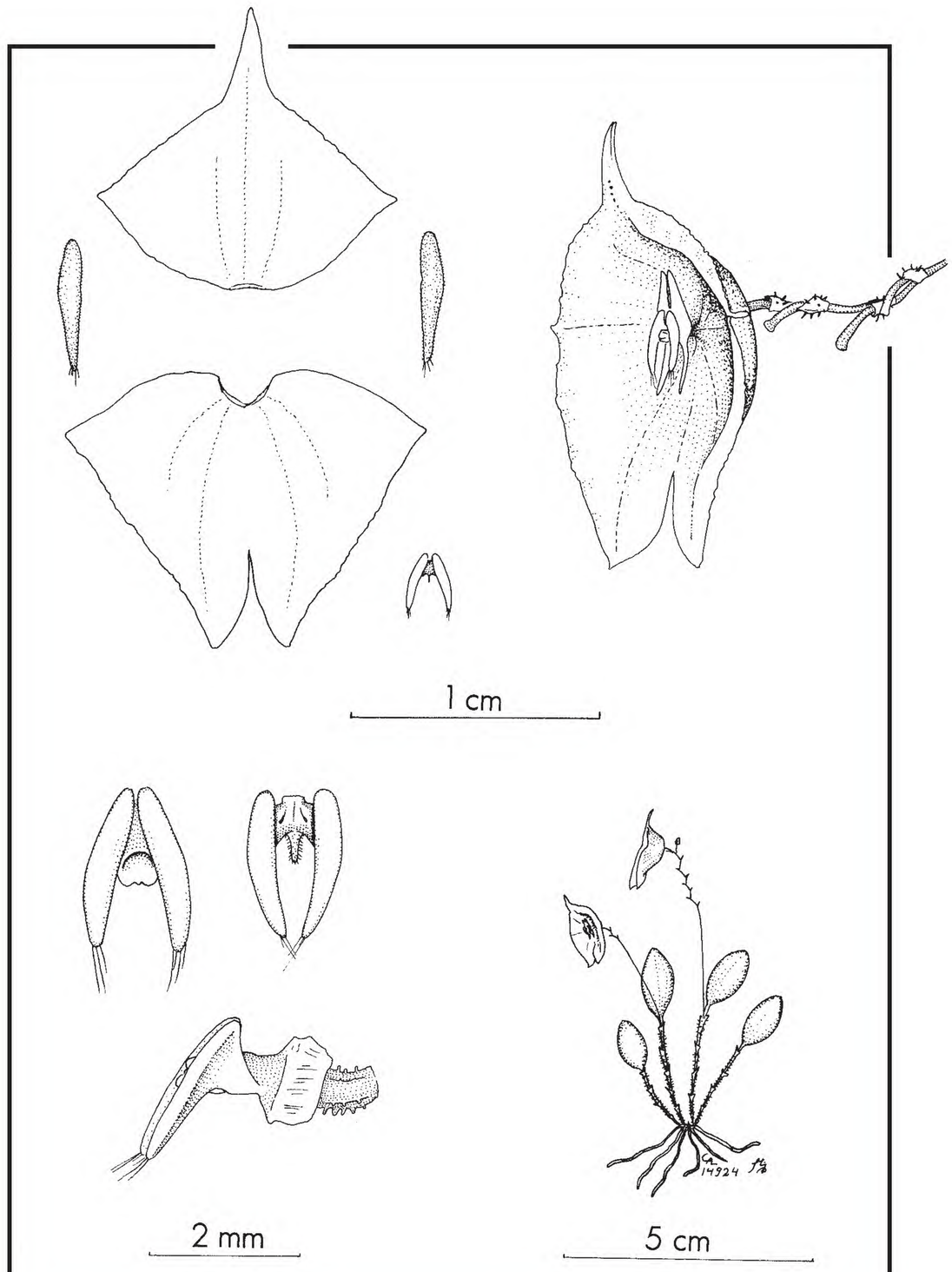



Fig. 78. Lepanthes cymbium

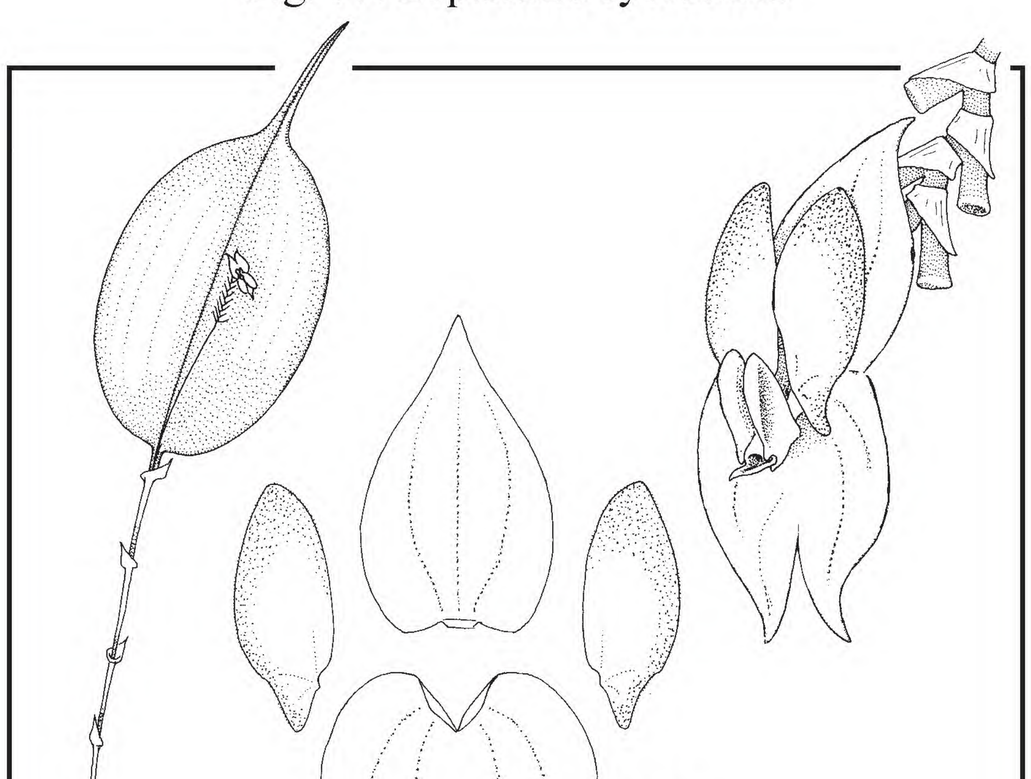



Fig. 79. Lepanthes darioi

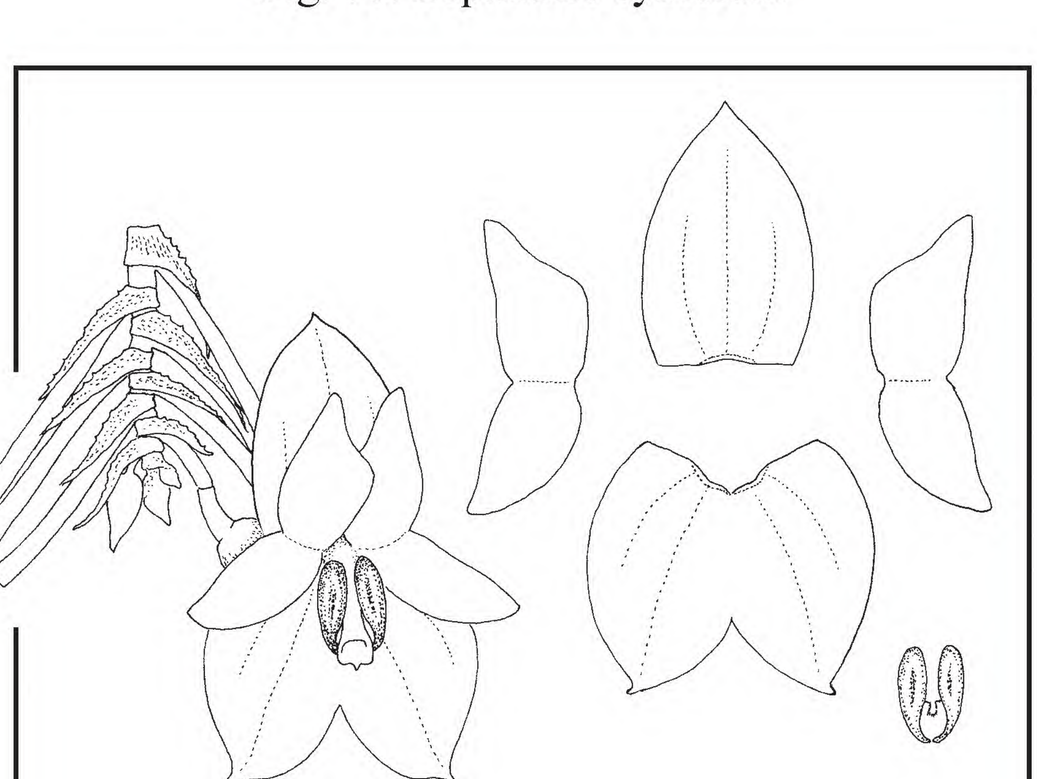



Fig. 80. Lepanthes dasyura

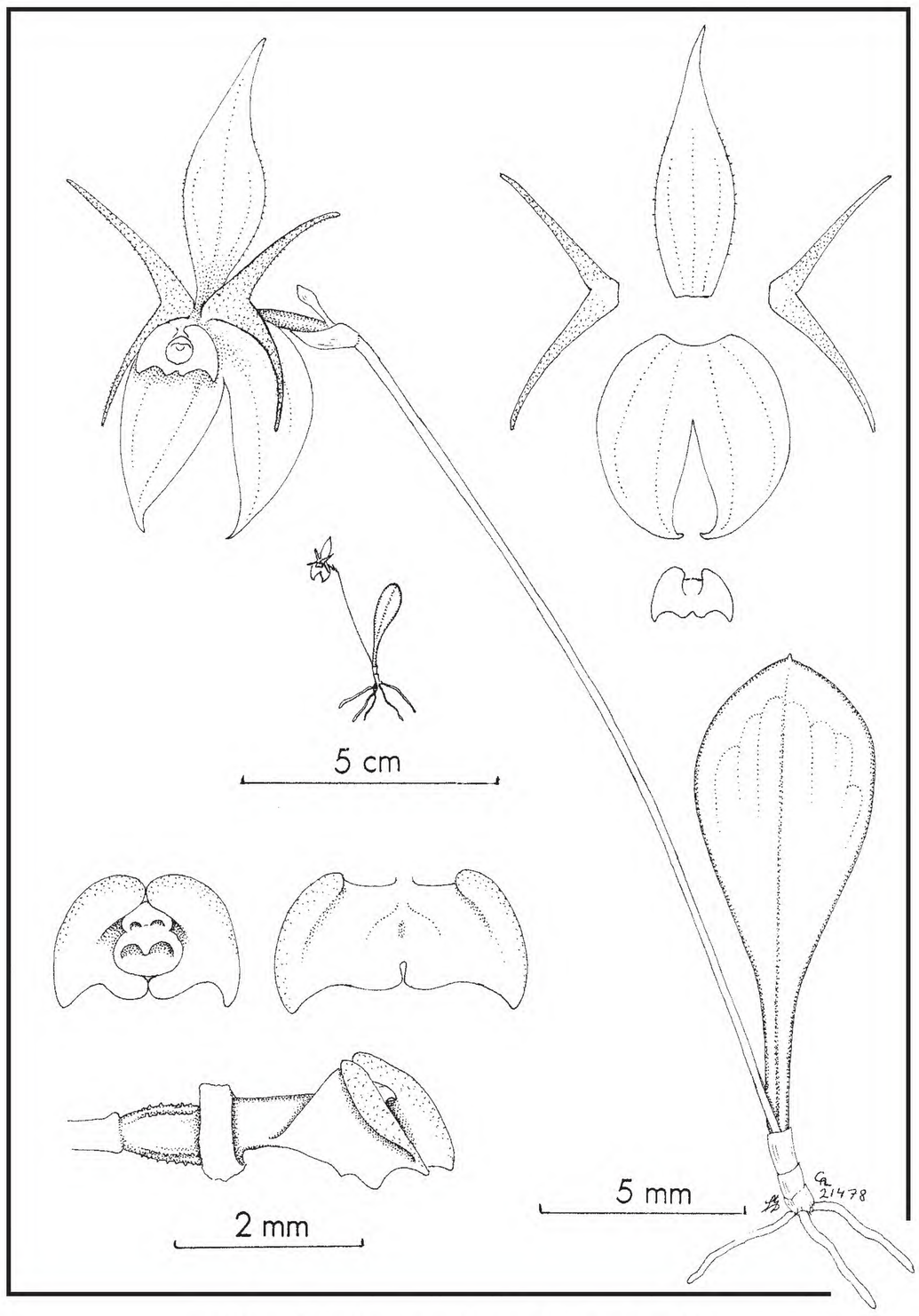



Fig. 81. Lepanthes debedoutii

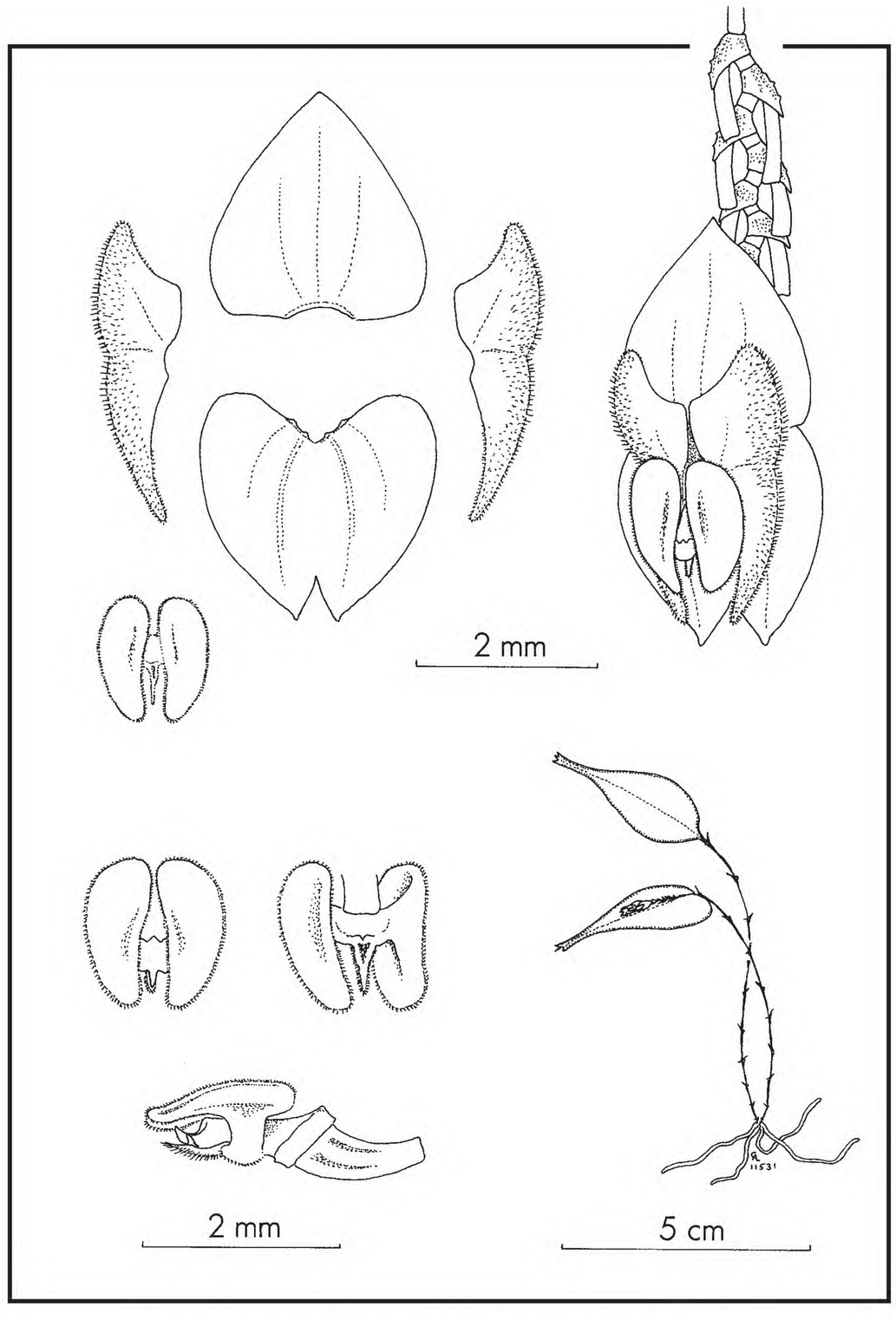



Fig. 82. Lepanthes debilis

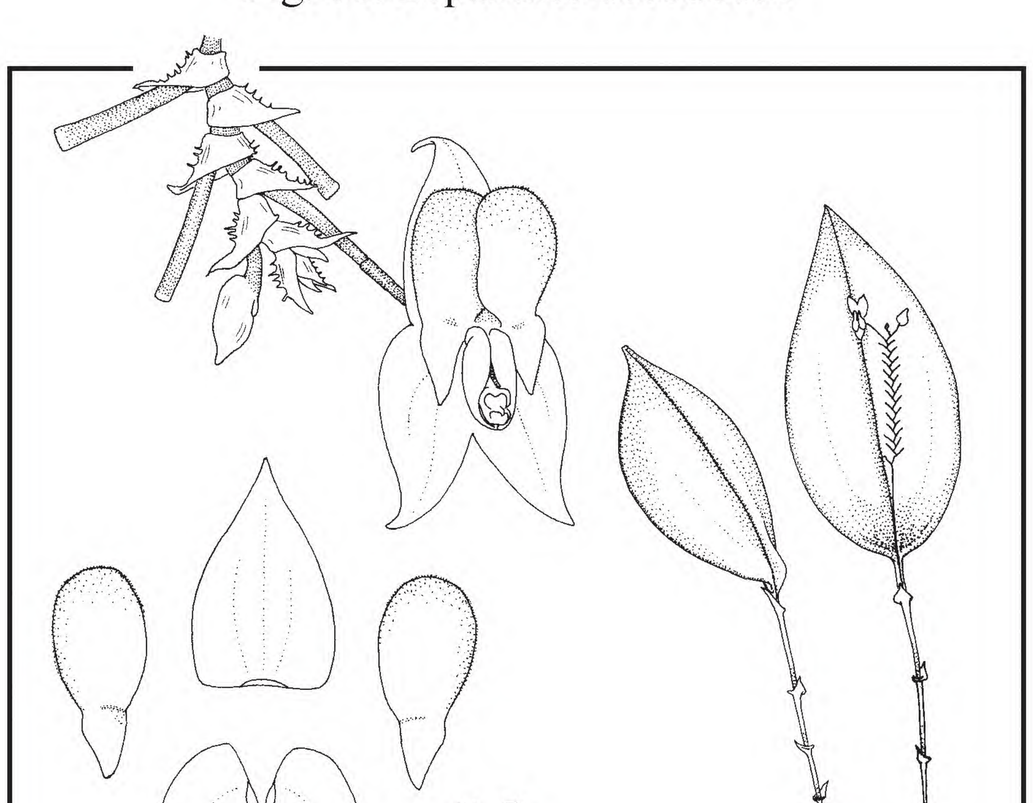



Fig. 83. Lepanthes declivis

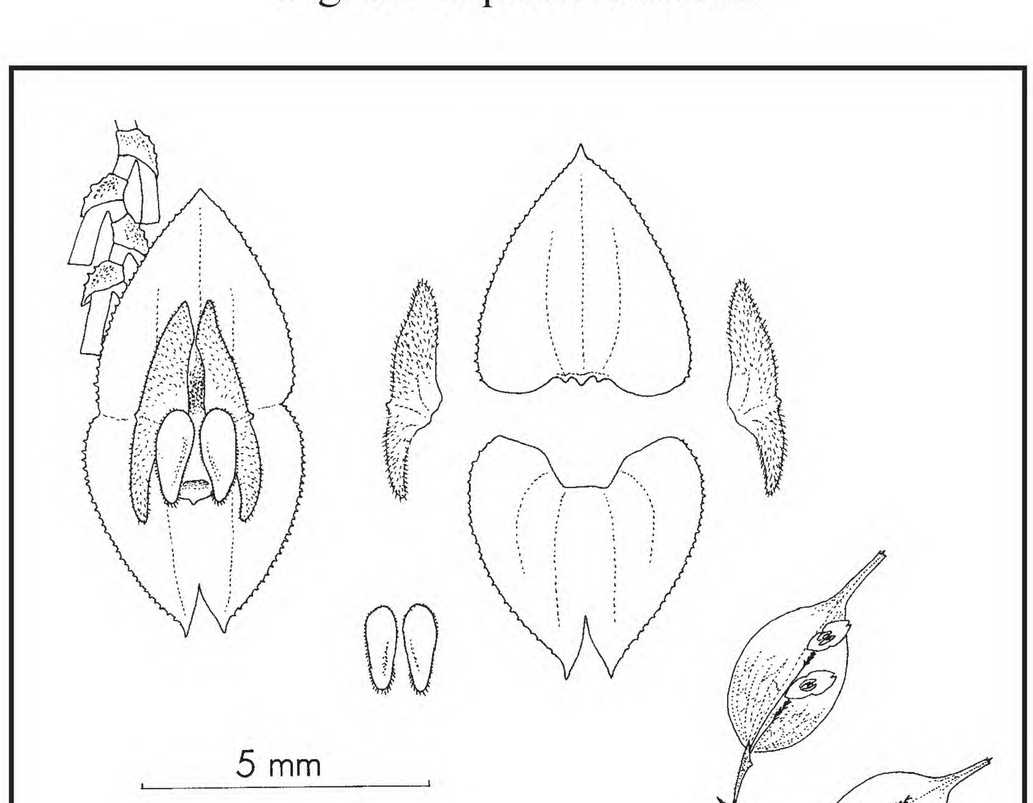



Fig. 84. Lepanthes deficiens

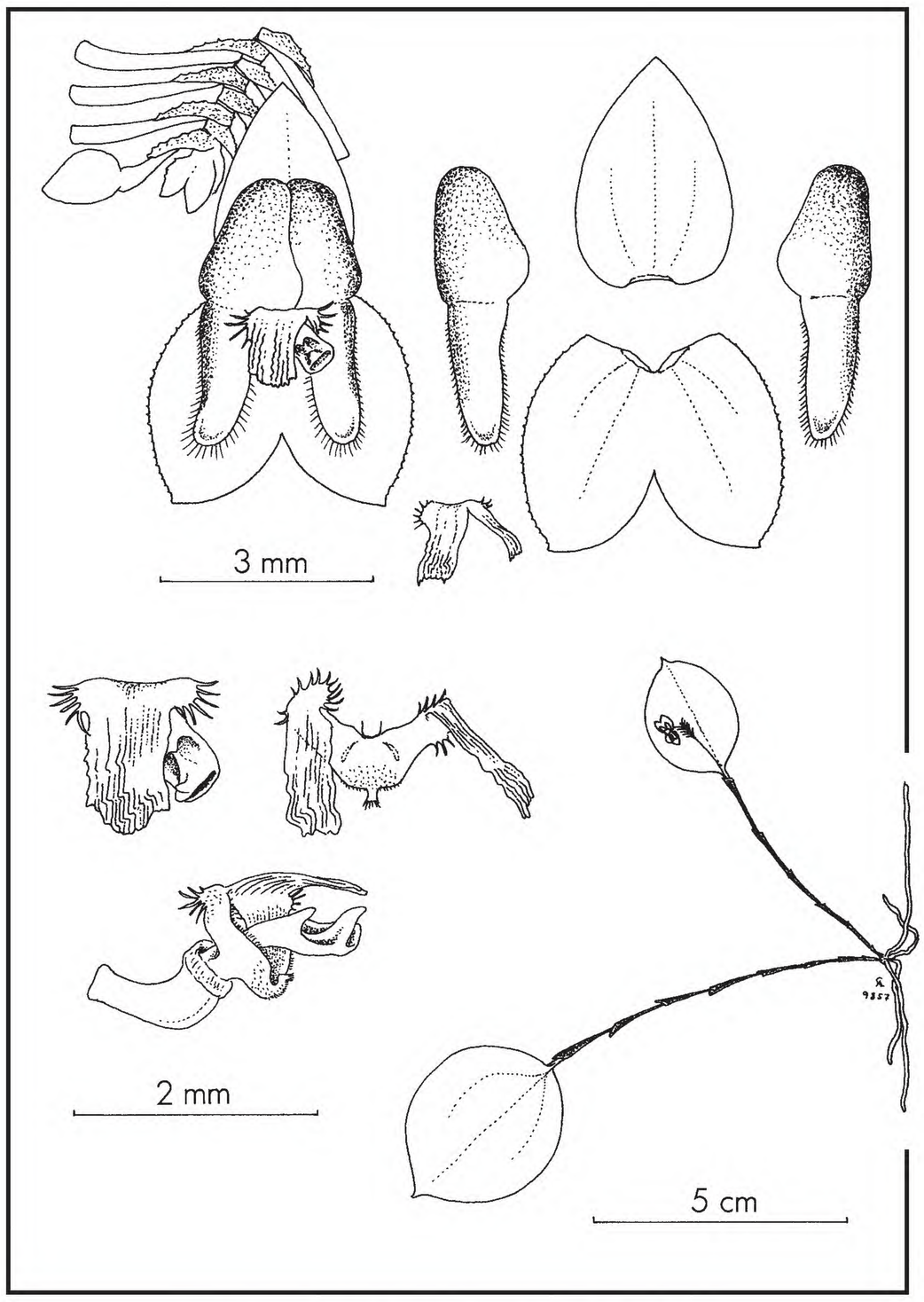



Fig. 85. Lepanthes deformis

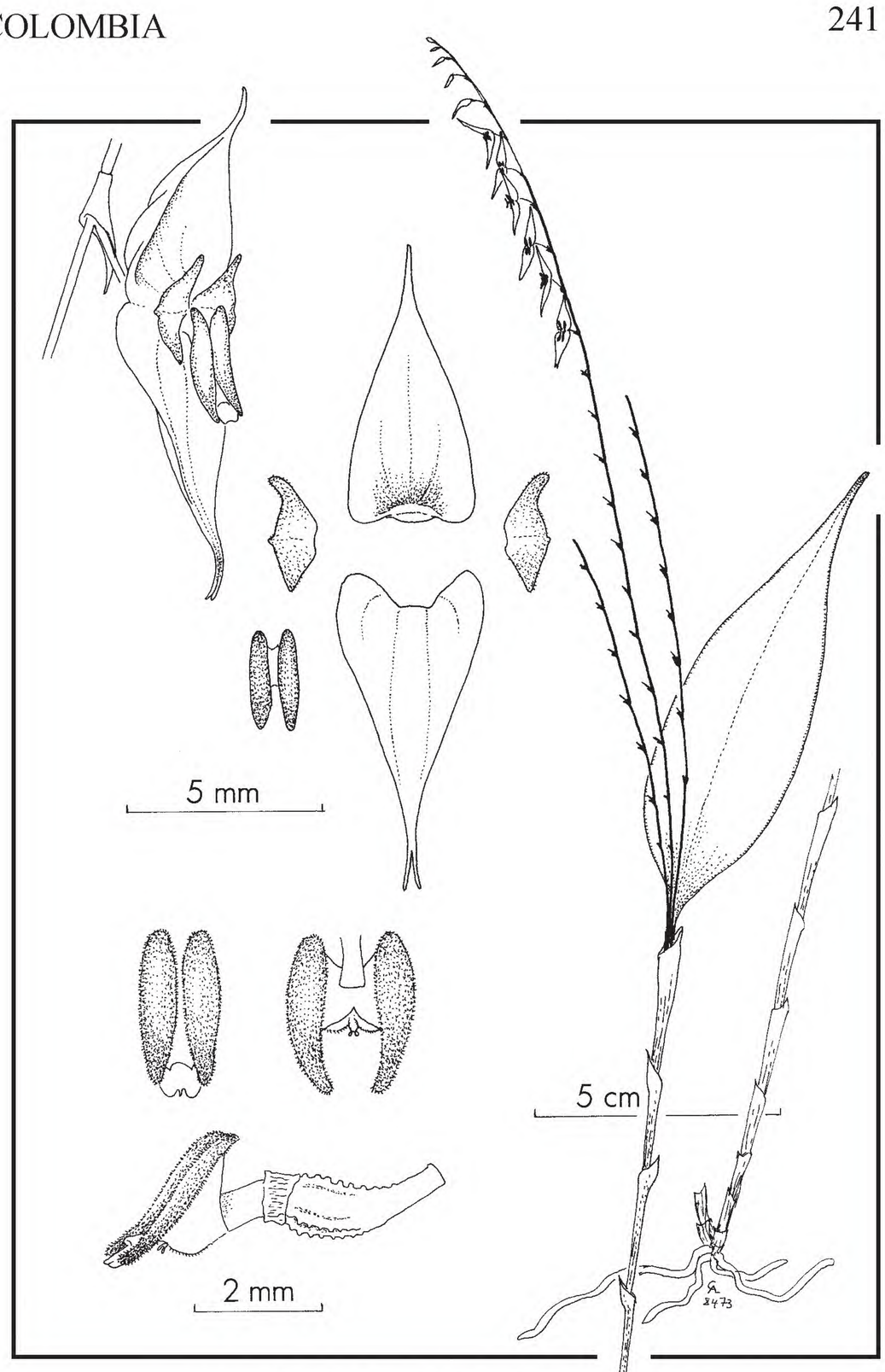



Fig. 86. Lepanthes deliciasensis

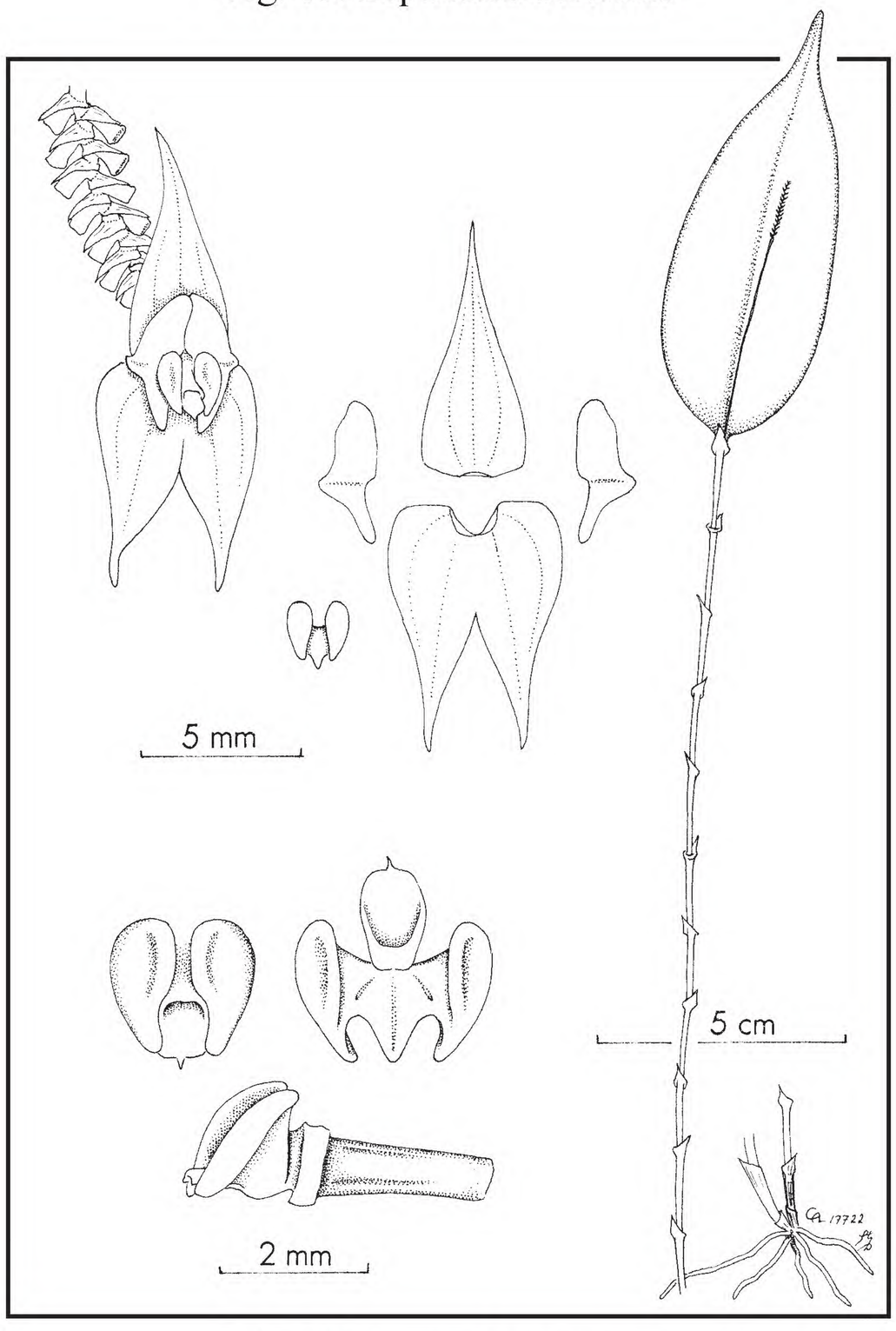



Fig. 87. Lepanthes deutera

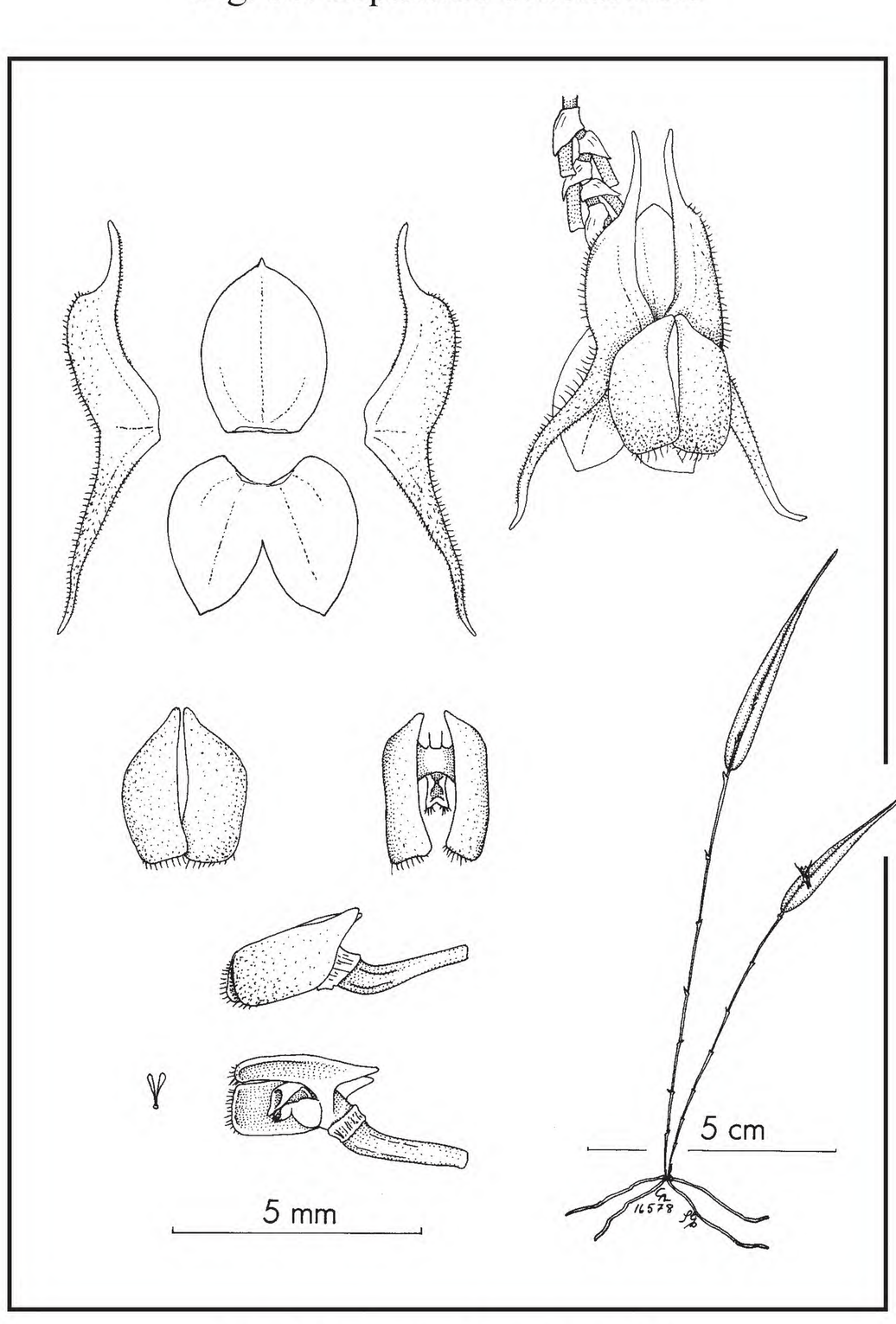



Fig. 88. Lepanthes dewildei

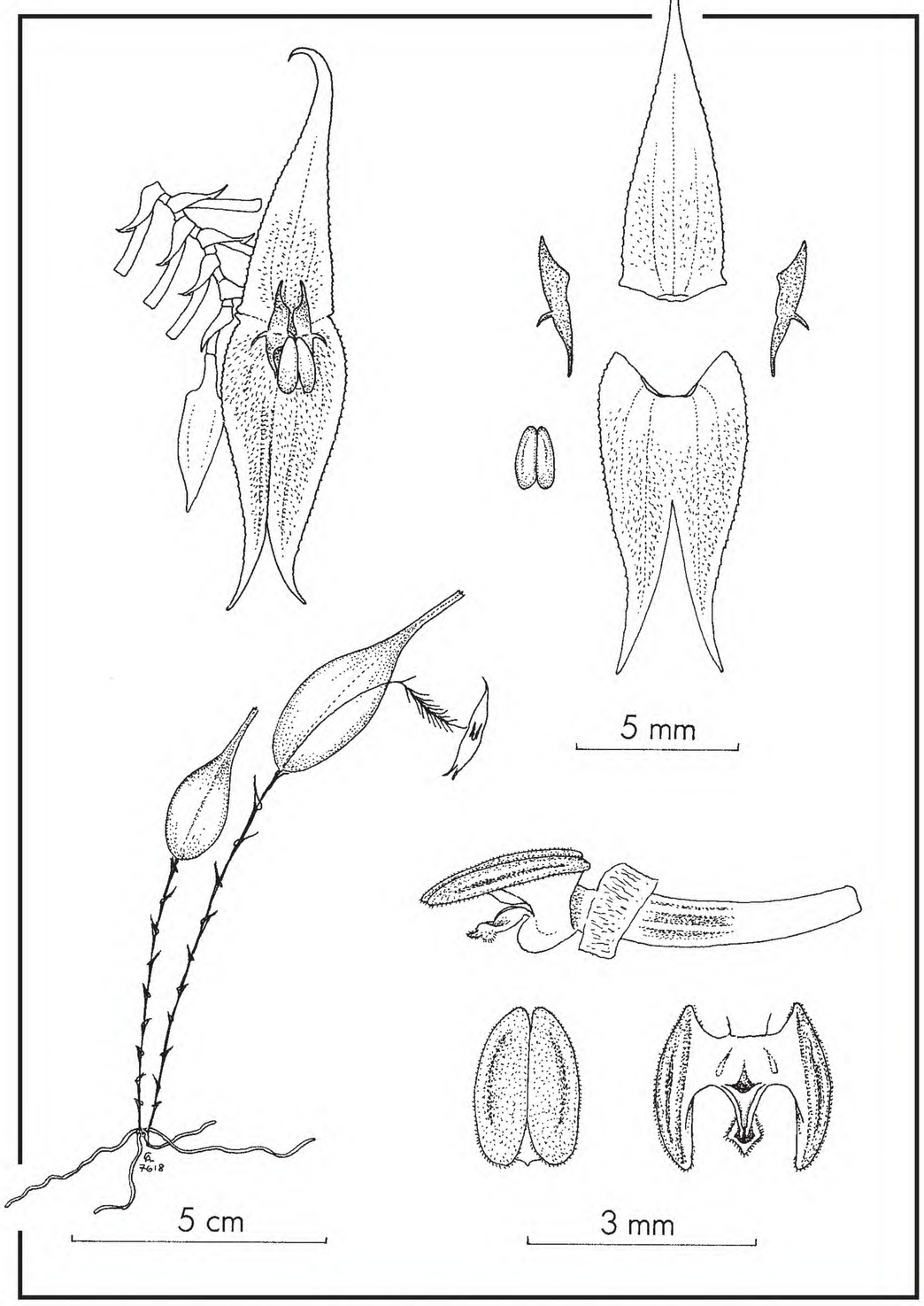



Fig. 89. Lepanthes diabolica

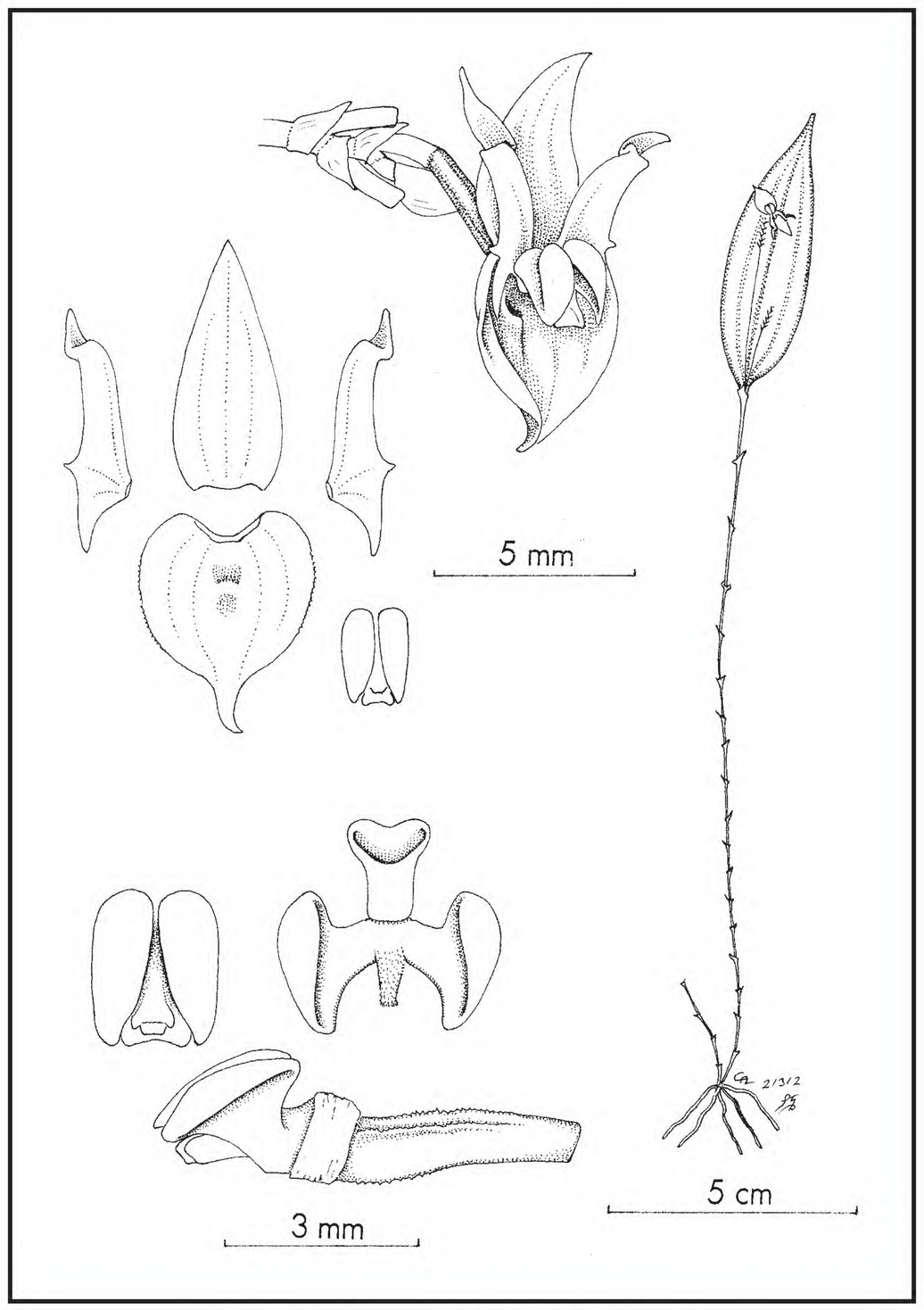



Fig. 90. Lepanthes dicyrtopetala

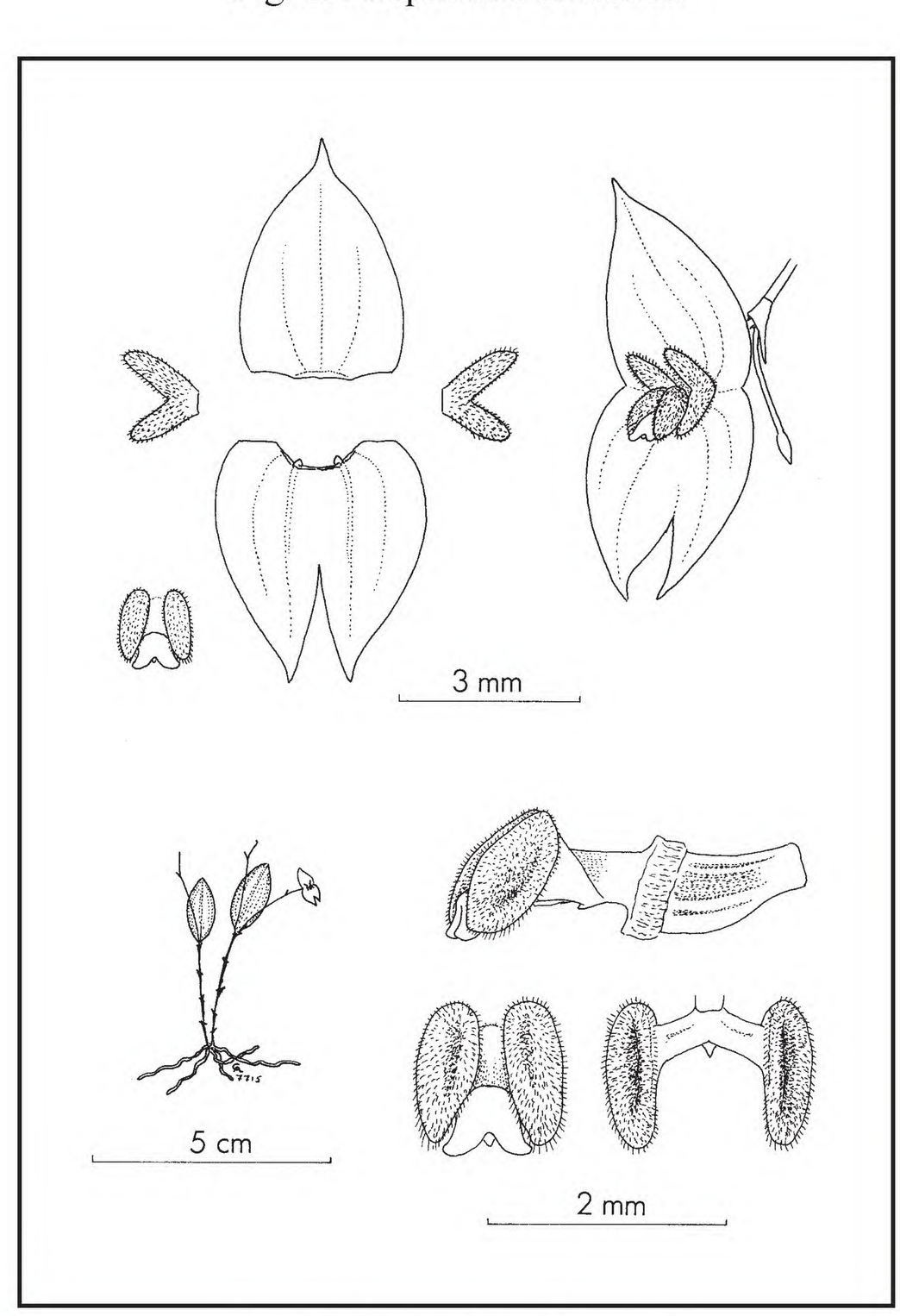



Fig. 91. Lepanthes didactyla

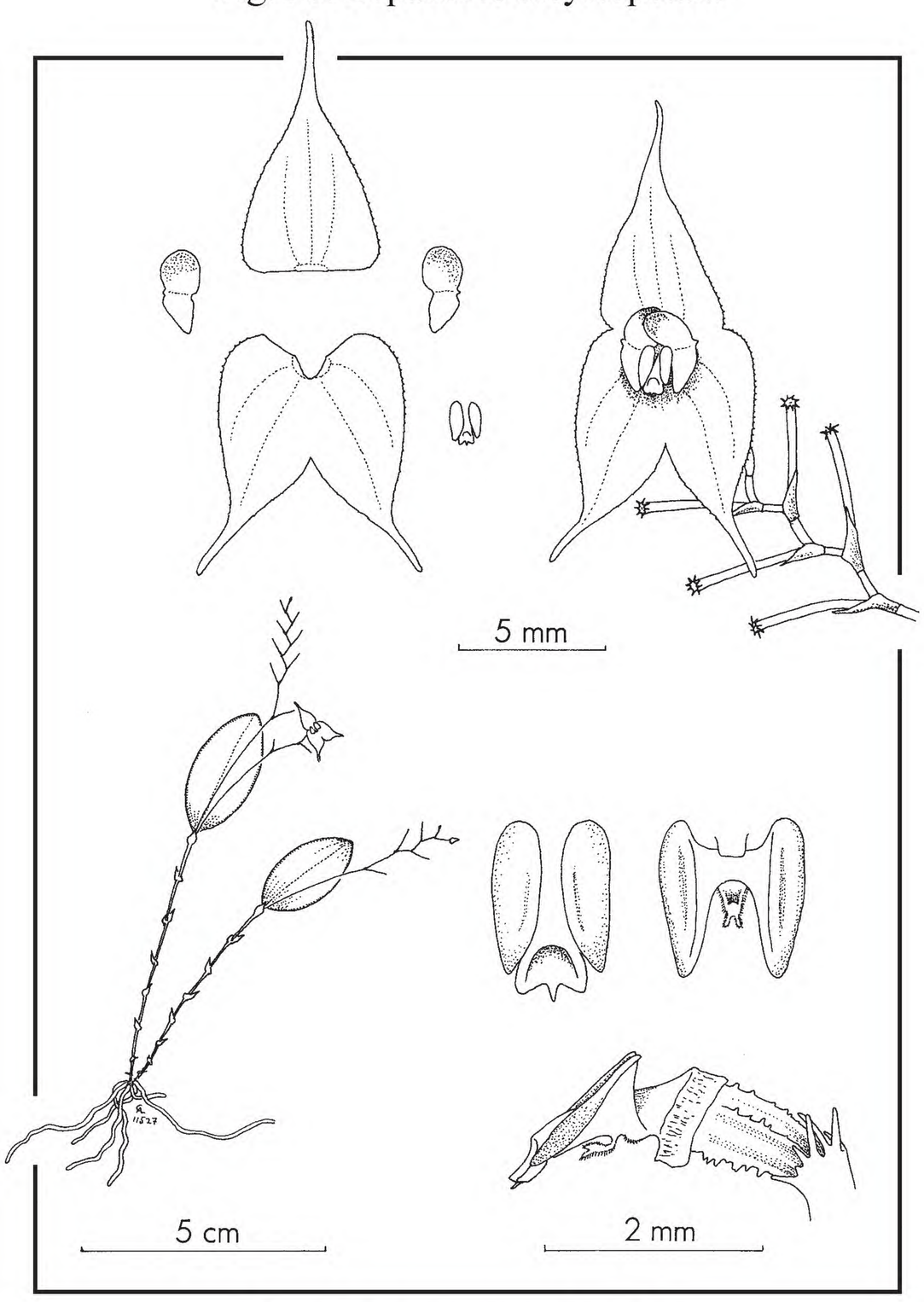



Fig. 92. Lepanthes discolor

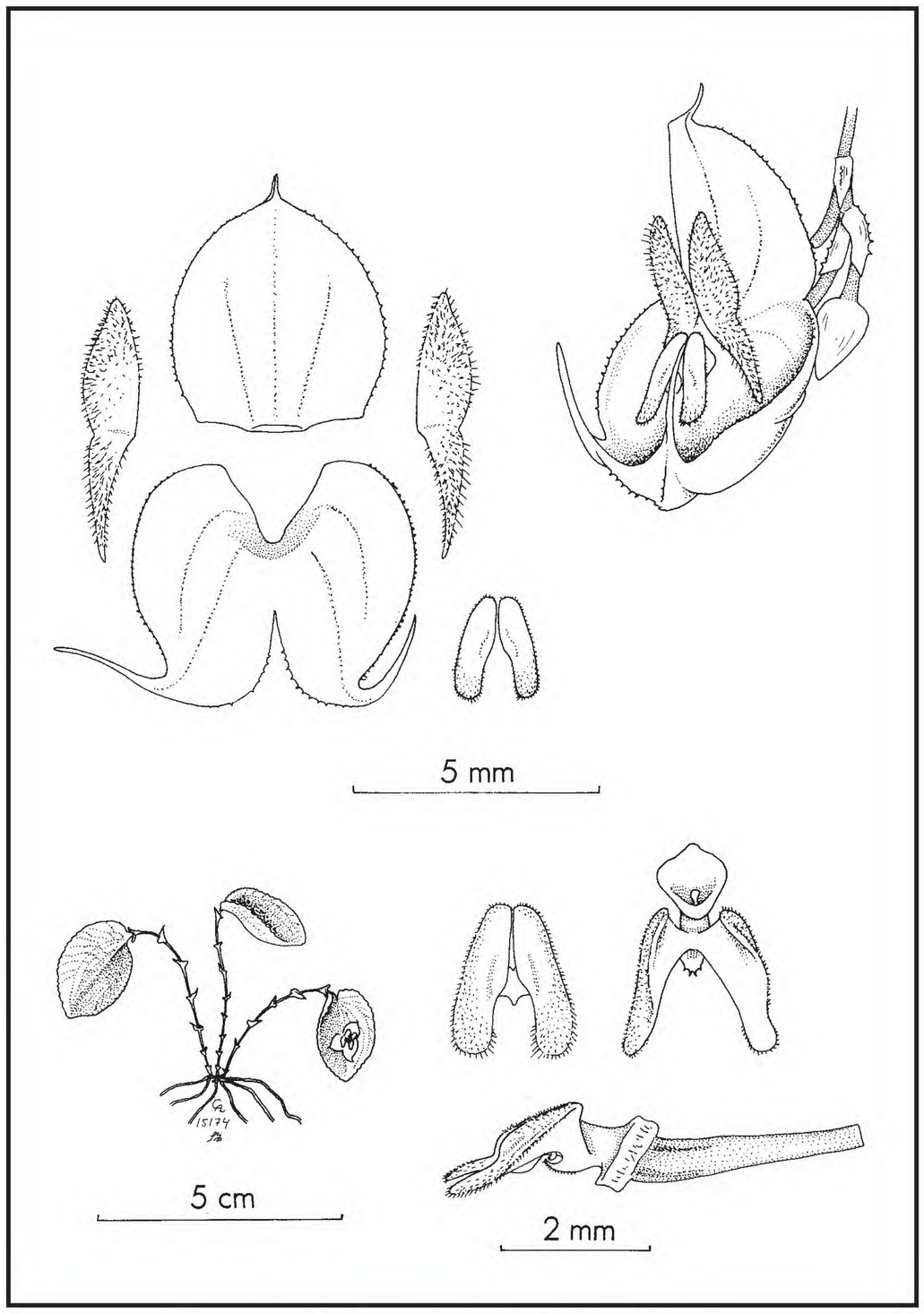



Fig. 93. Lepanthes dodsonii

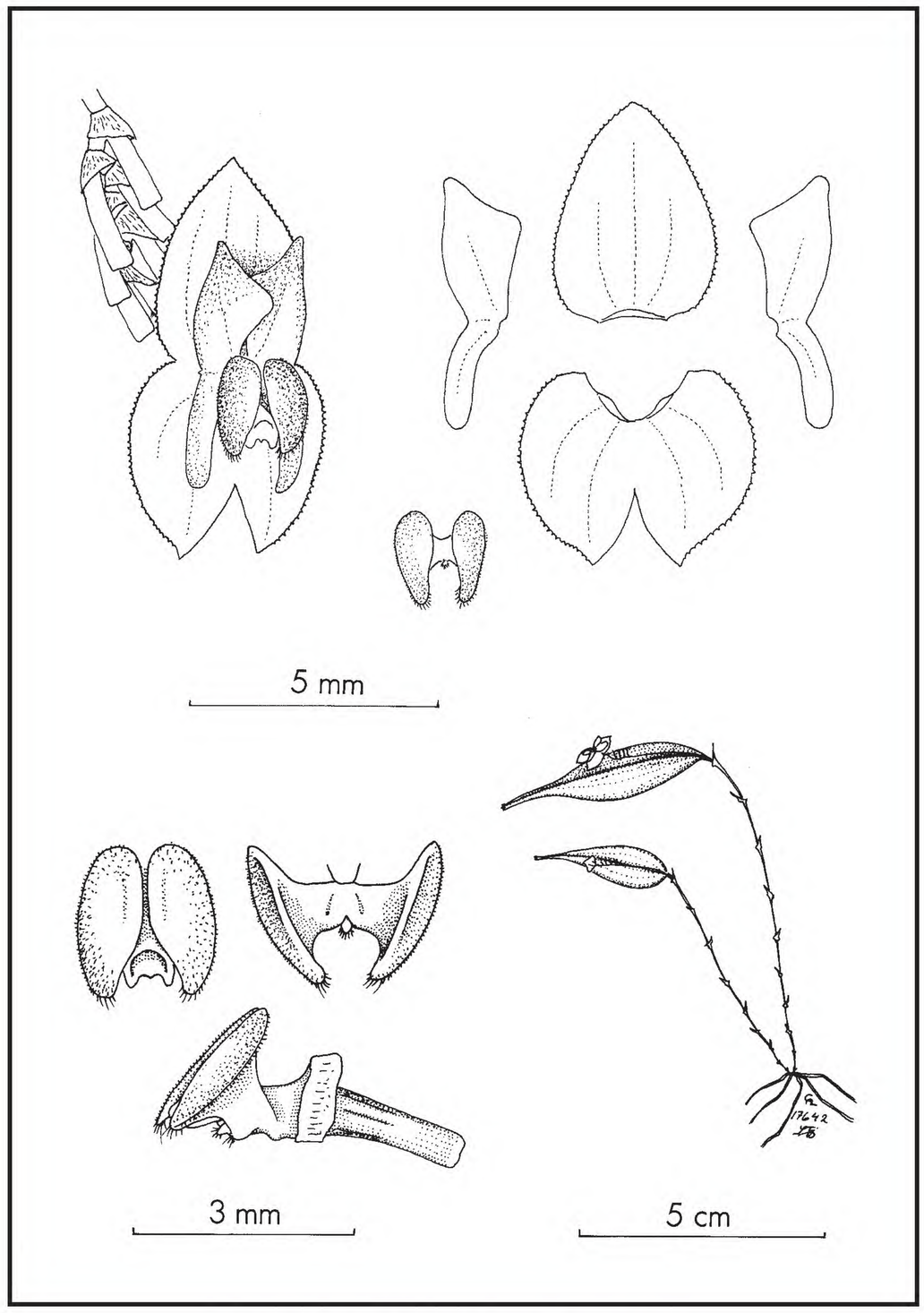



Fig. 94. Lepanthes dolabrata

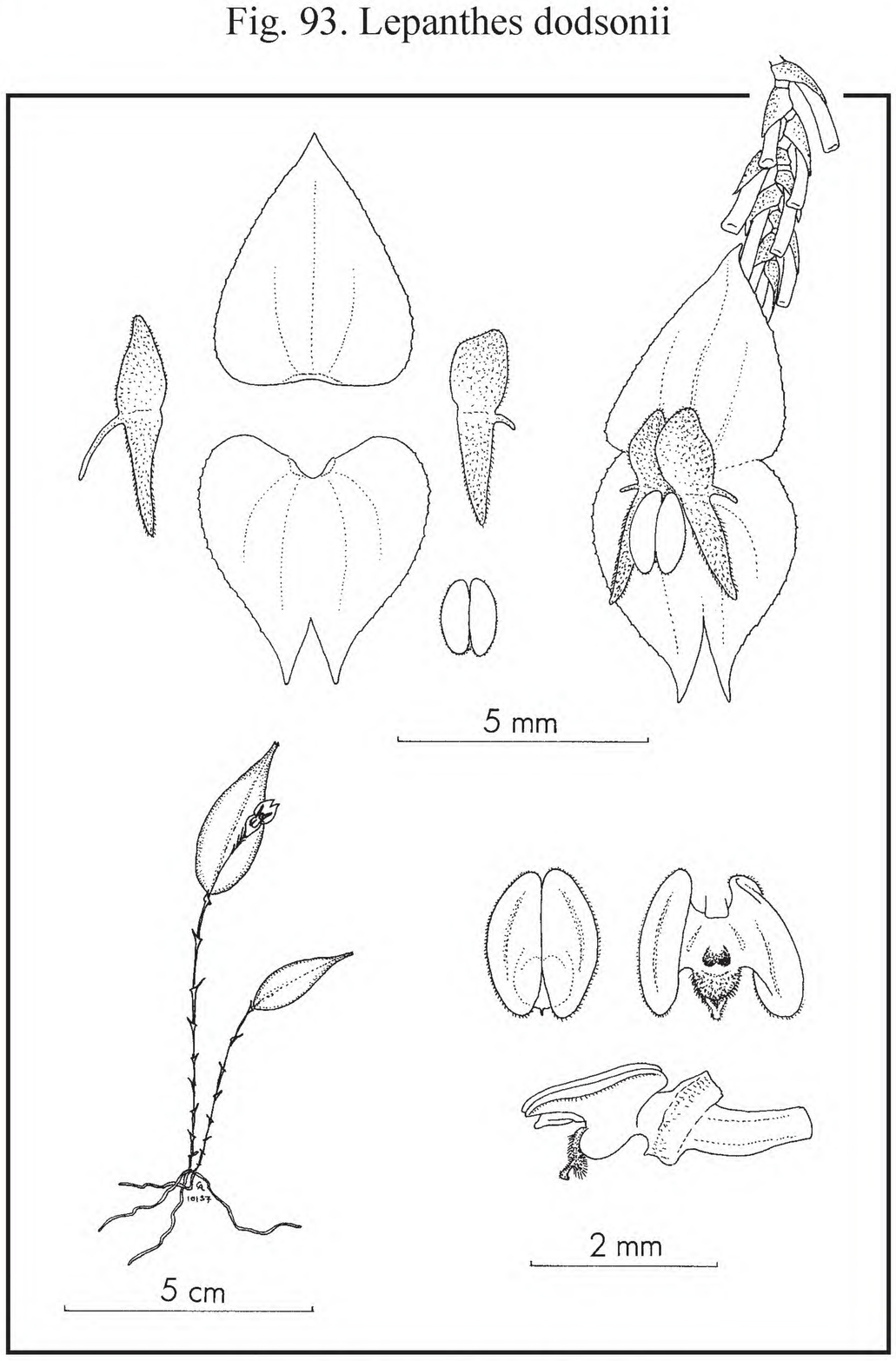



Fig. 95. Lepanthes dryades

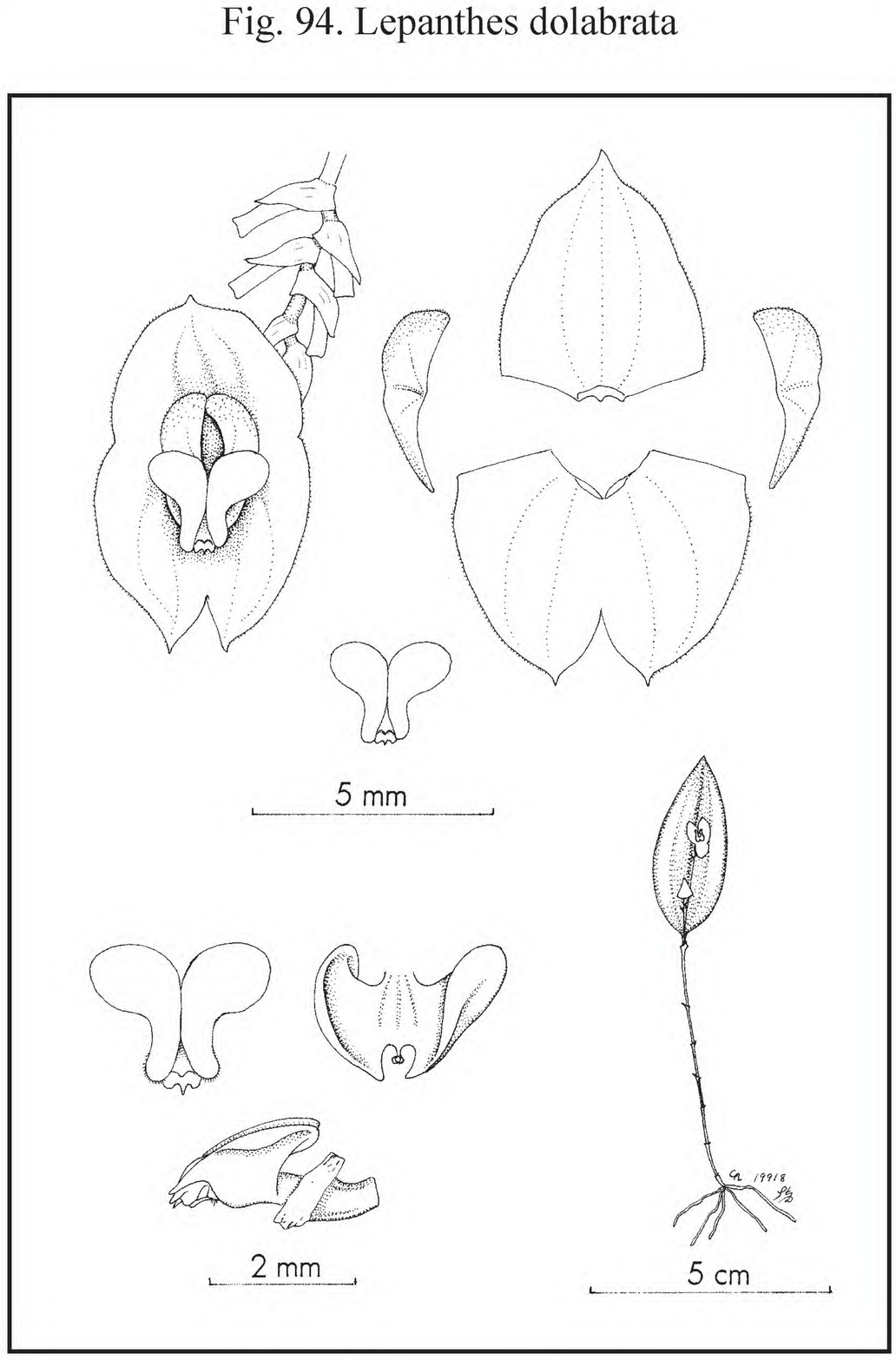



Fig. 96. Lepanthes dumbo

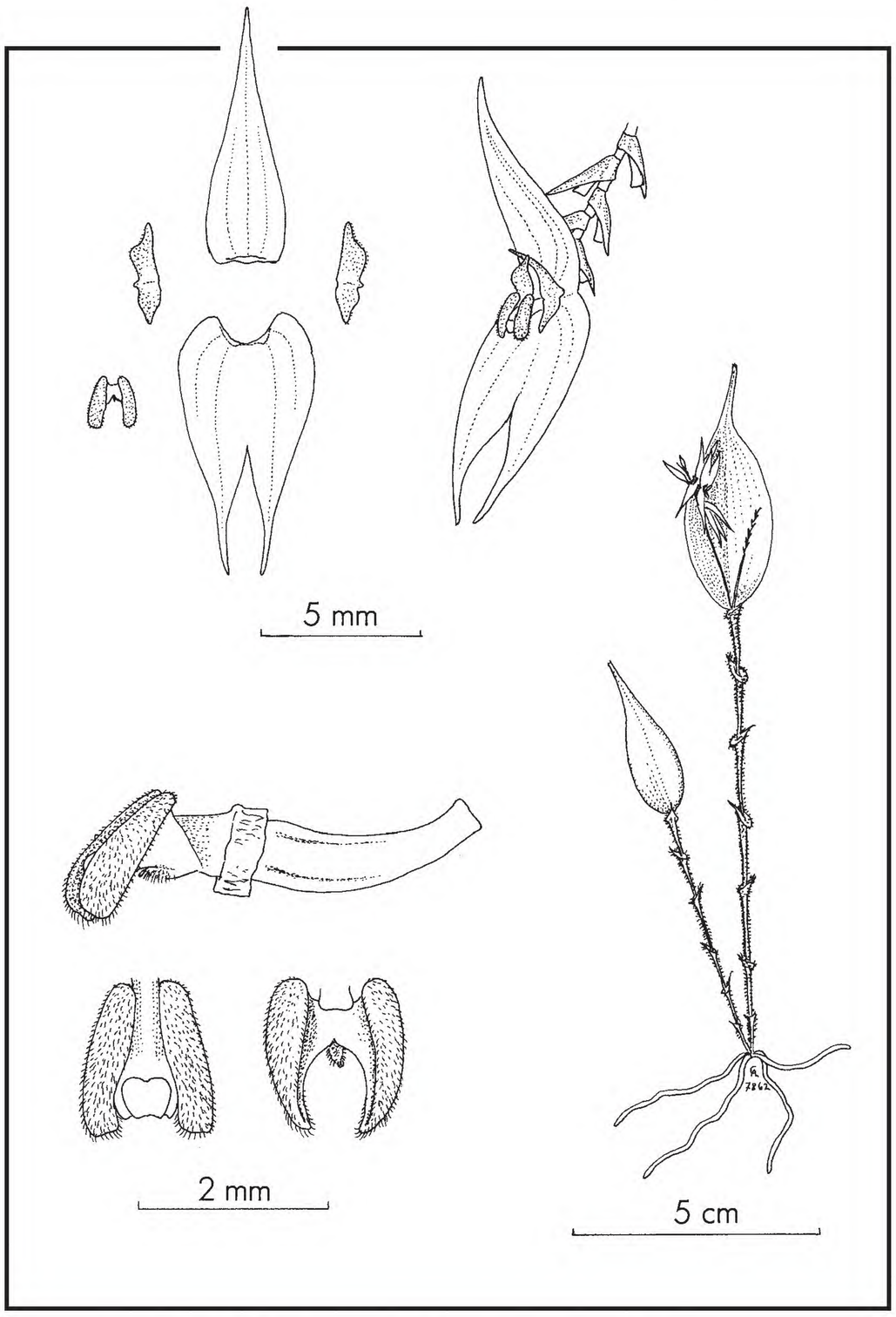



Fig. 97a. Lepanthes dunstervilleorum

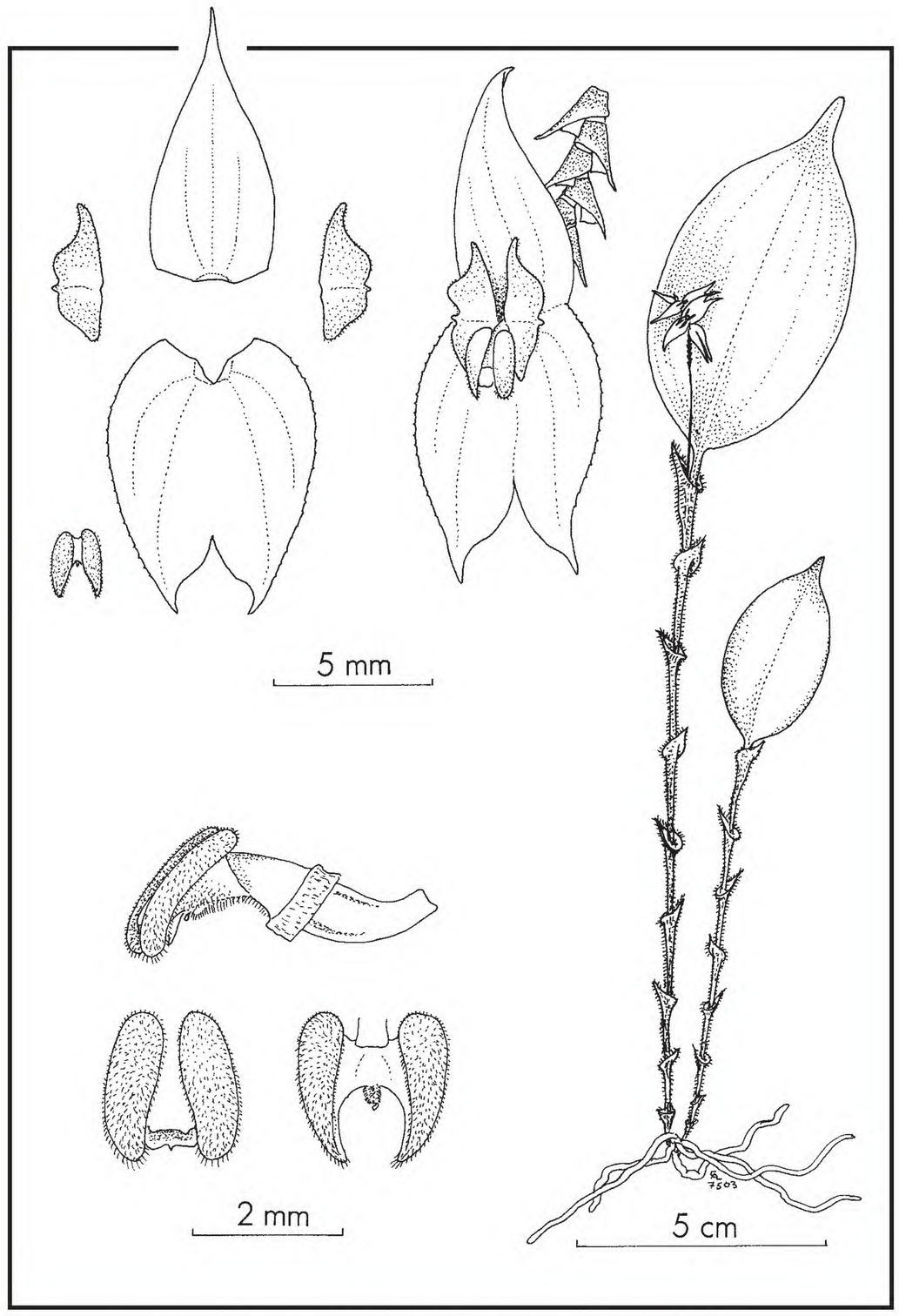



Fig. 97b. Lepanthes dunstervilleorum

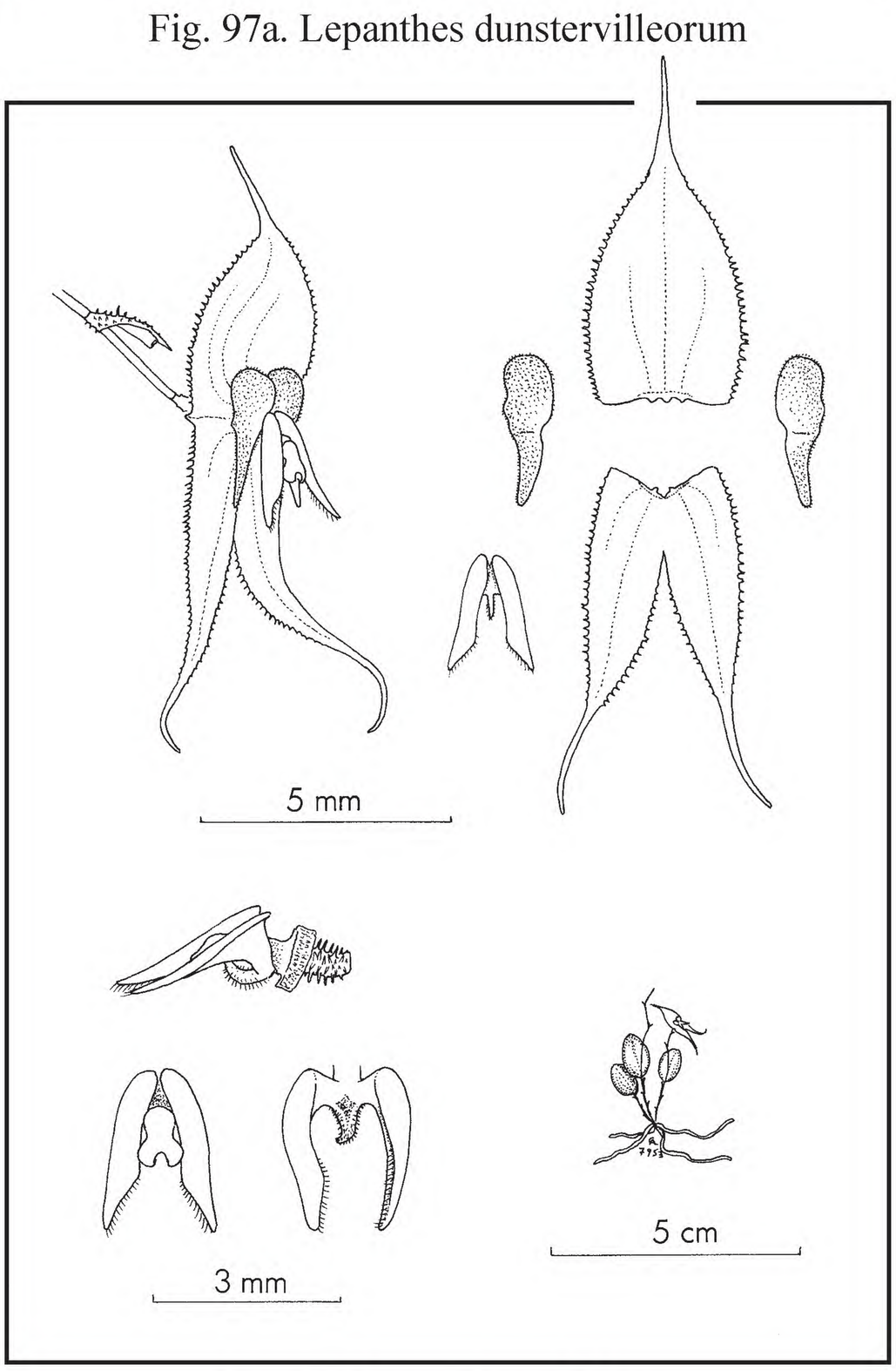



Fig. 98. Lepanthes echidion

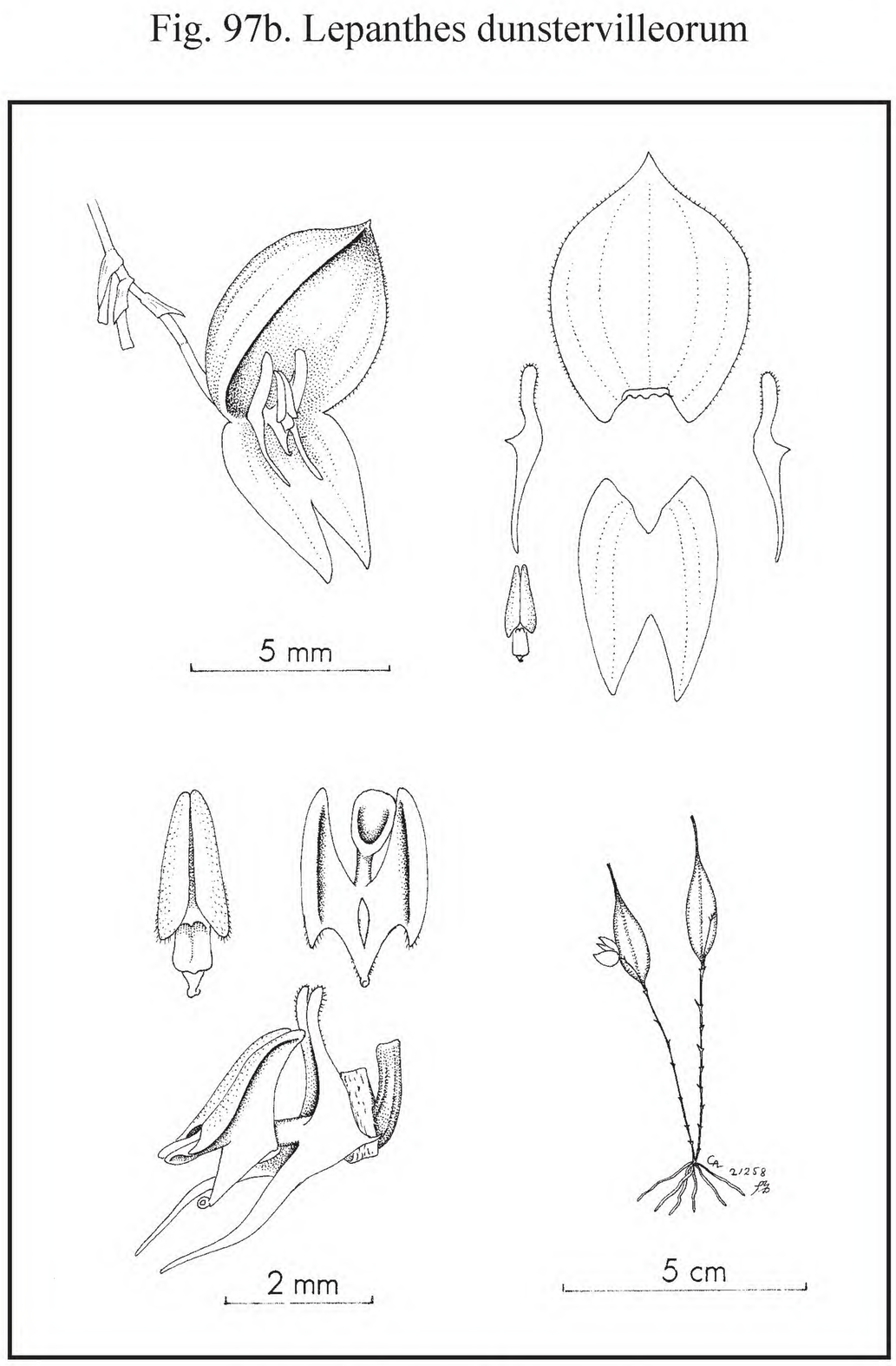



Fig. 99. Lepanthes ectopa

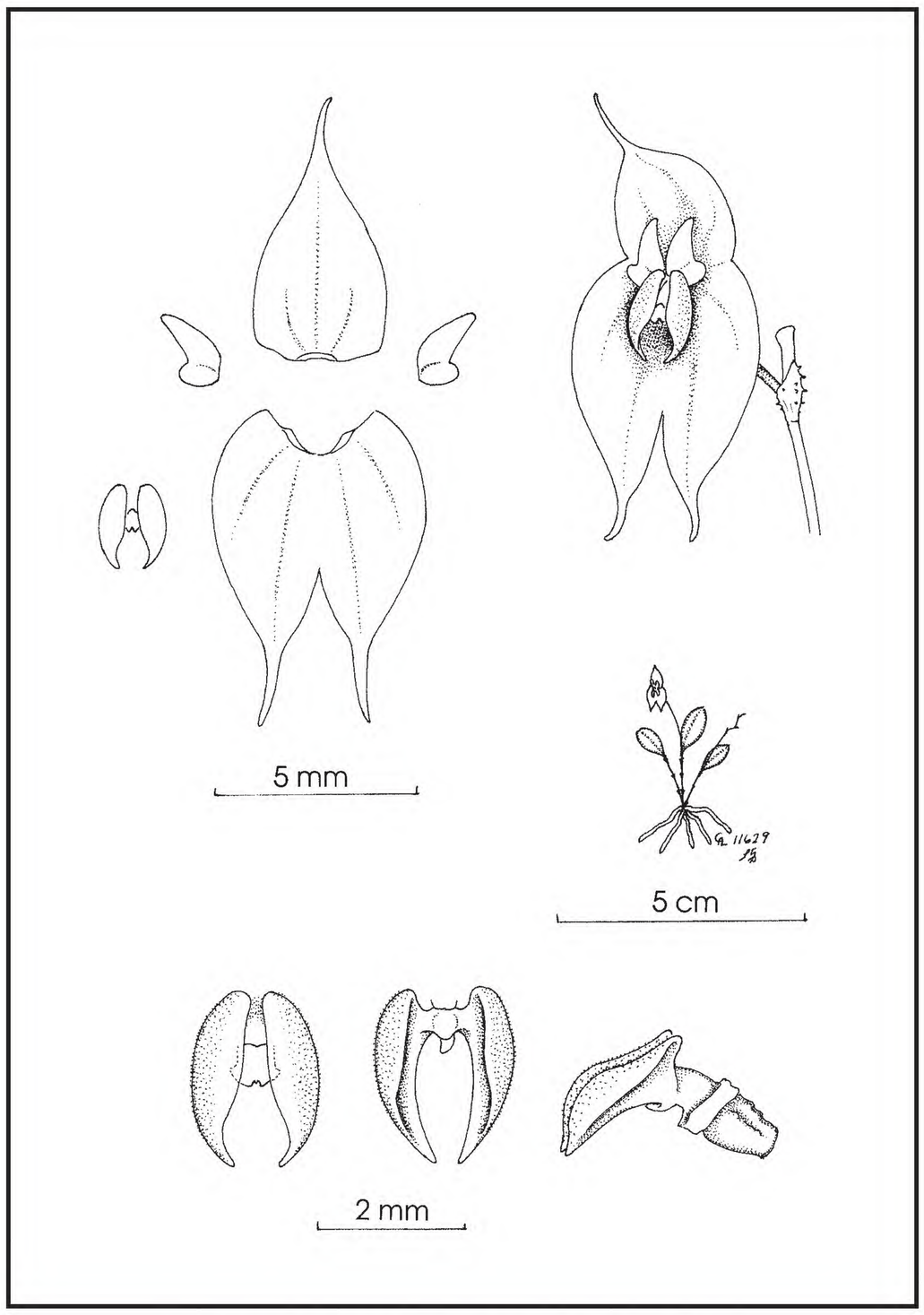



Fig. 100. Lepanthes edwardsii

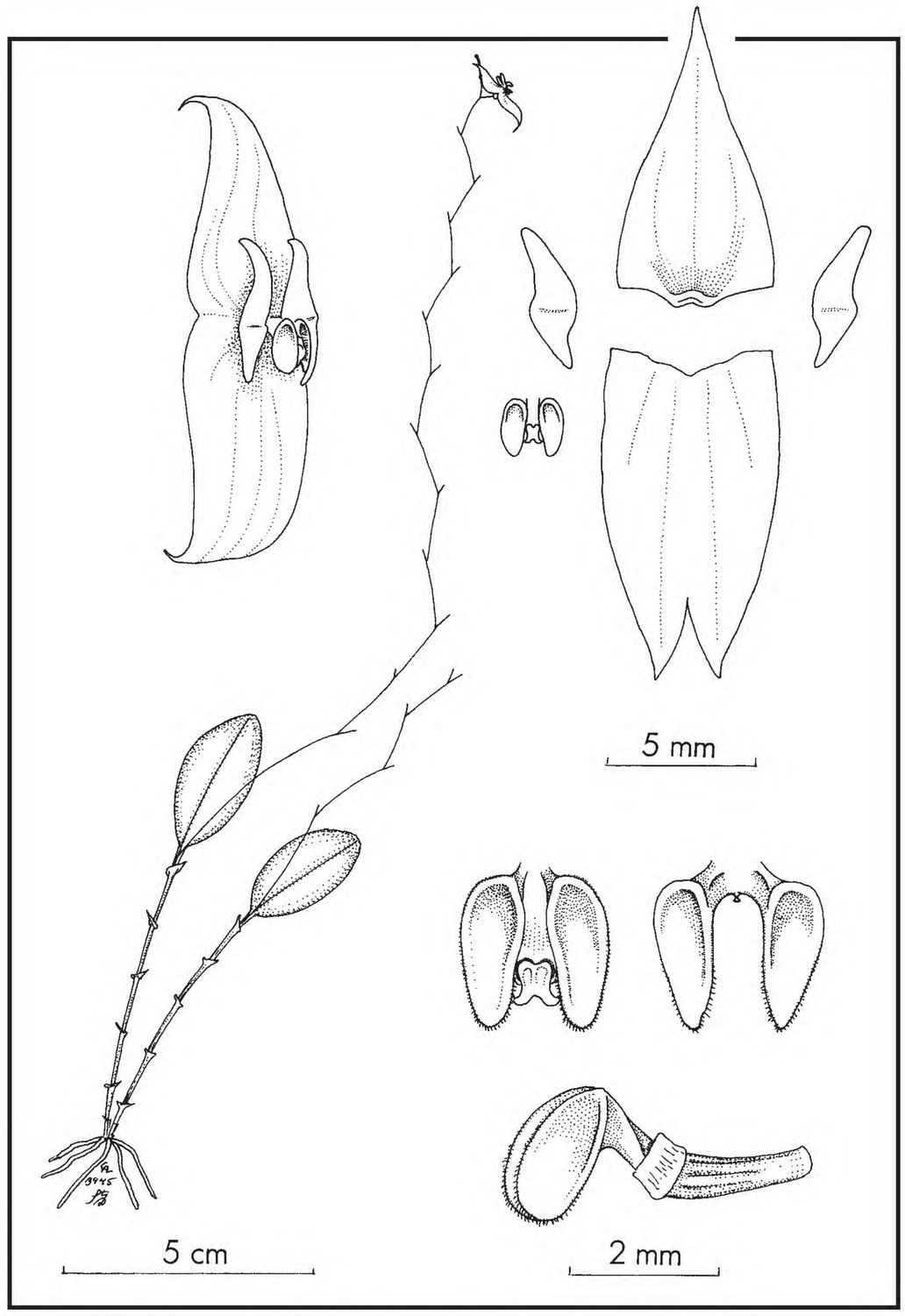



Fig. 101. Lepanthes effusa

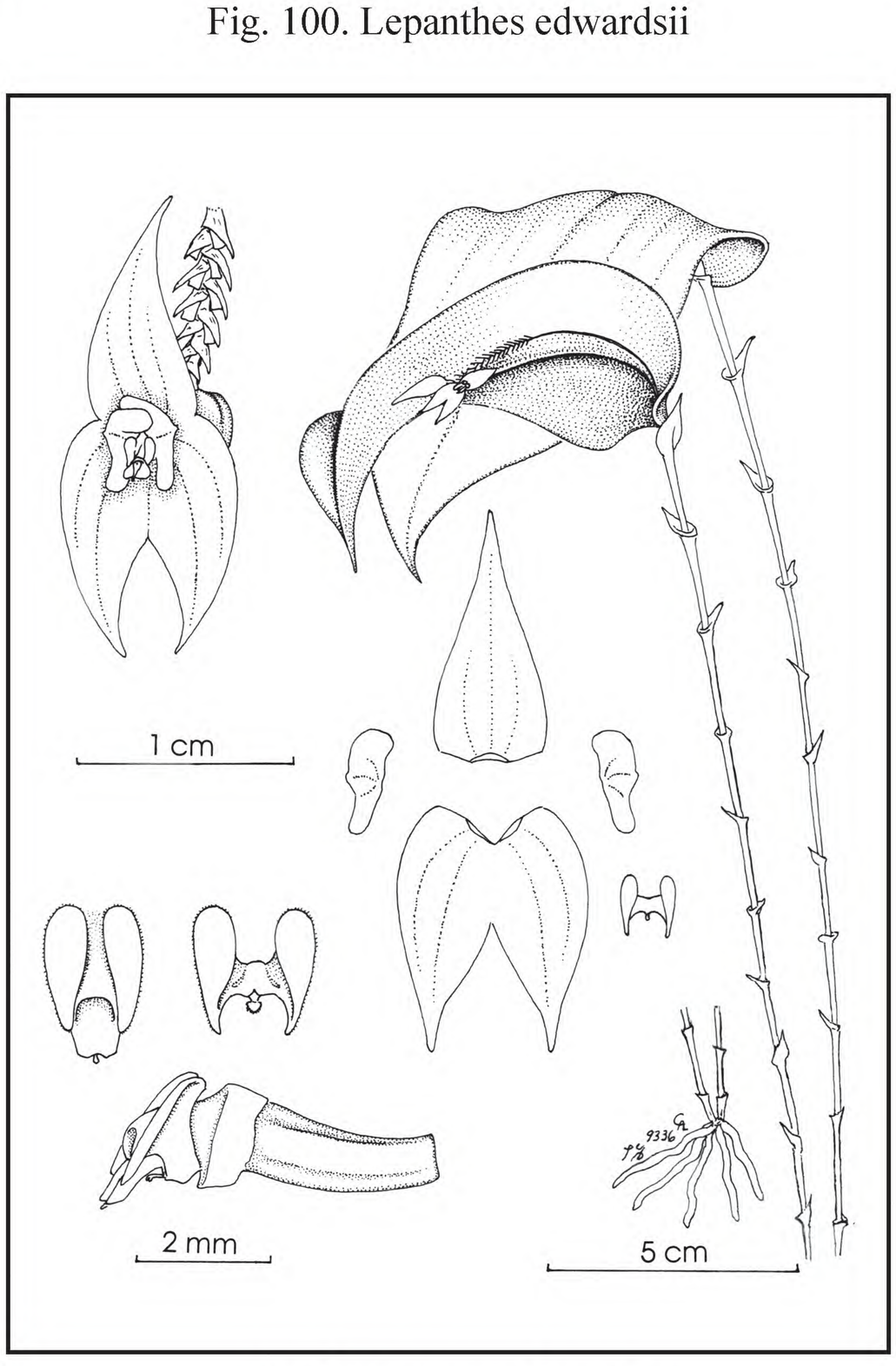



Fig. 102a. Lepanthes elata

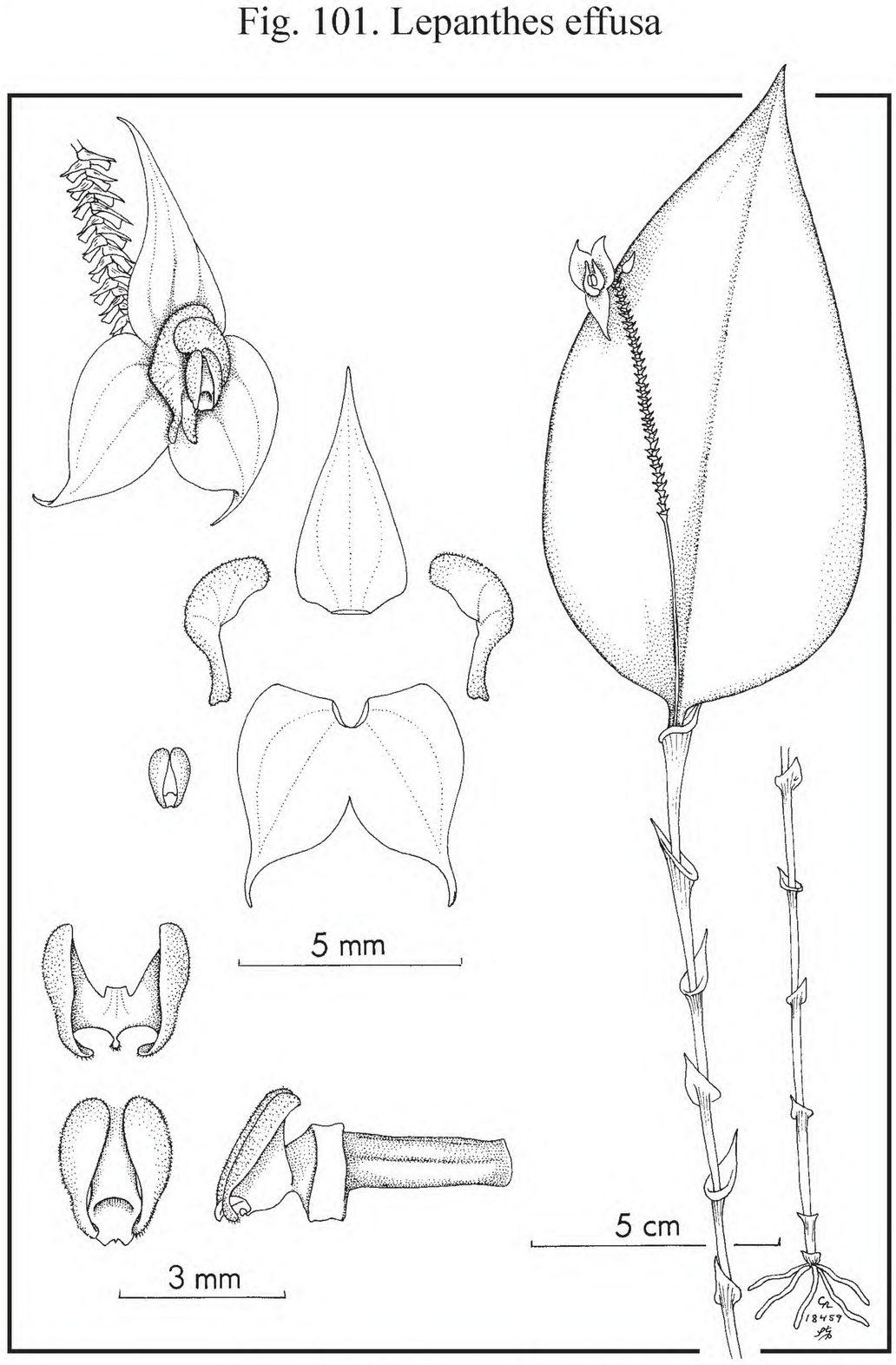



Fig. 102b. Lepanthes elata

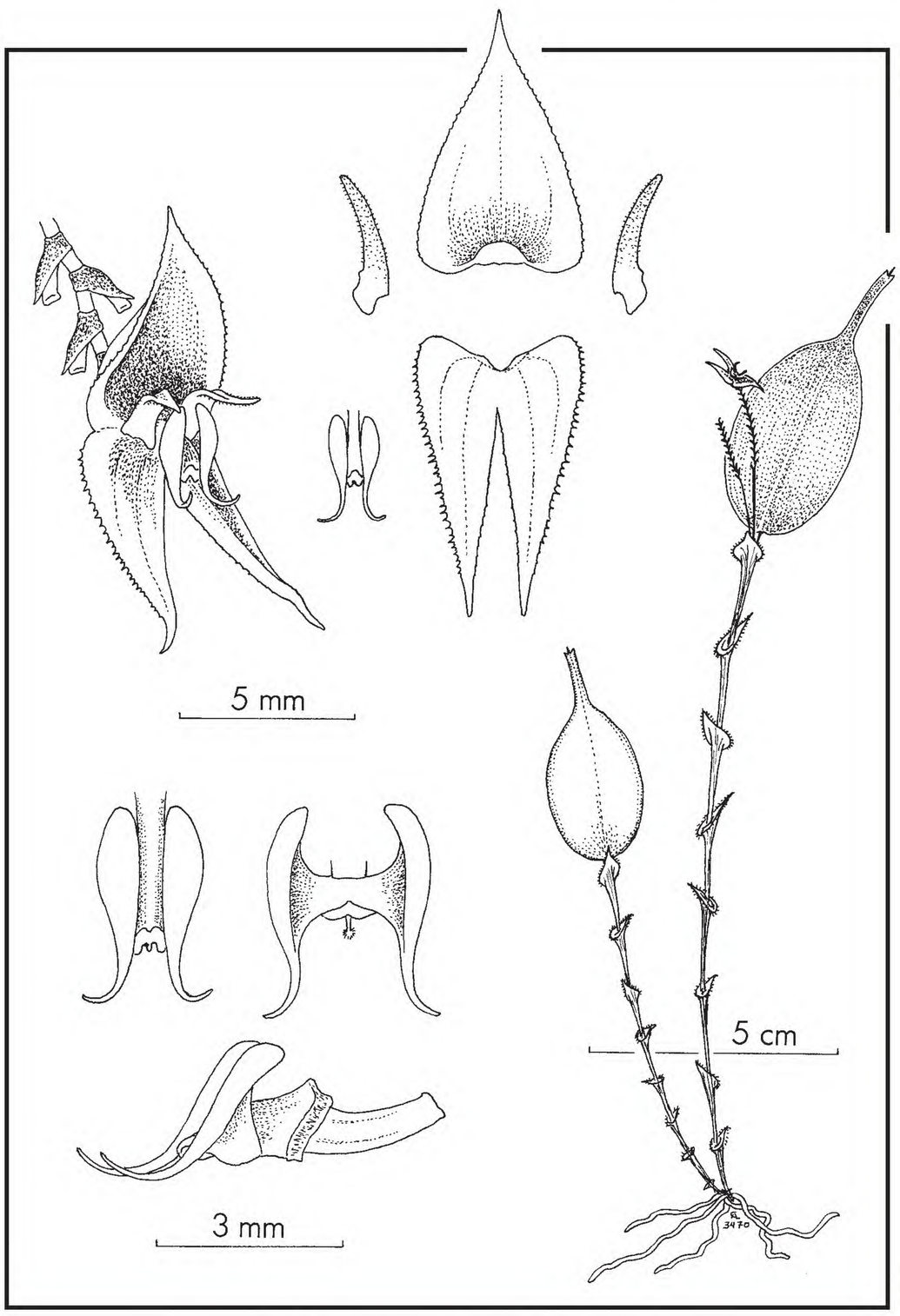



Fig. 103. Lepanthes elephantina

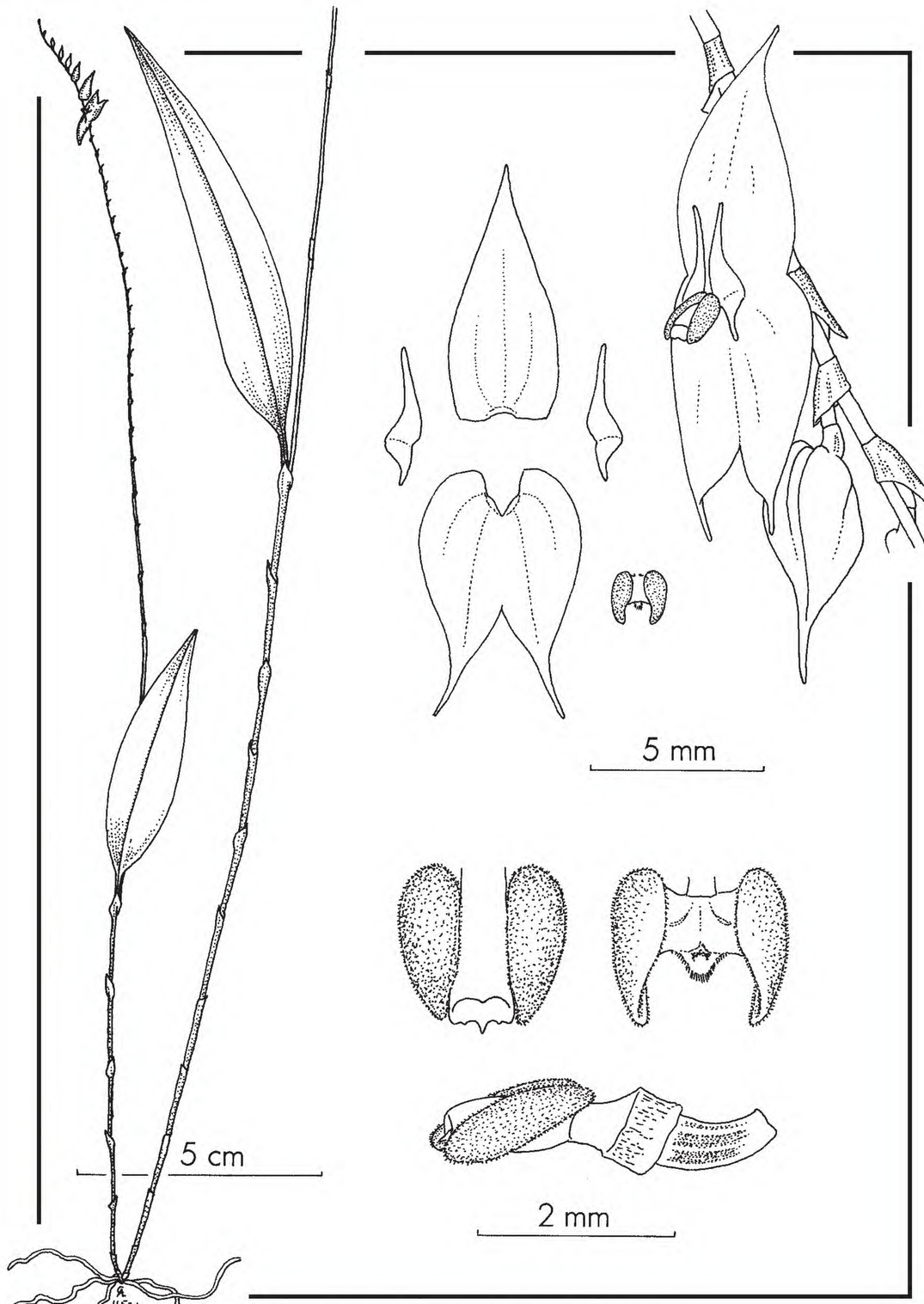



Fig. 104. Lepanthes elongata

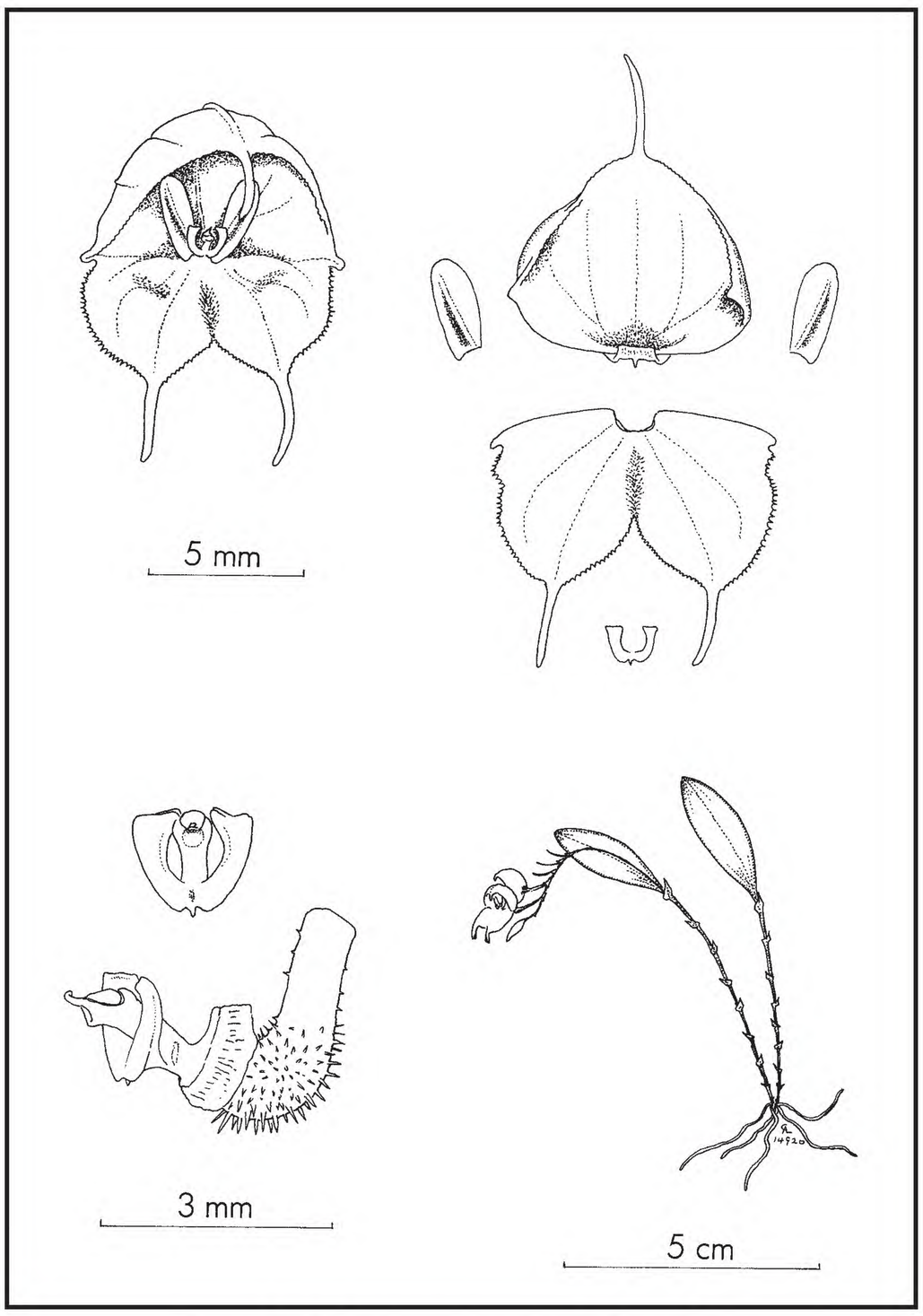



Fig. 105. Lepanthes equicalceolata

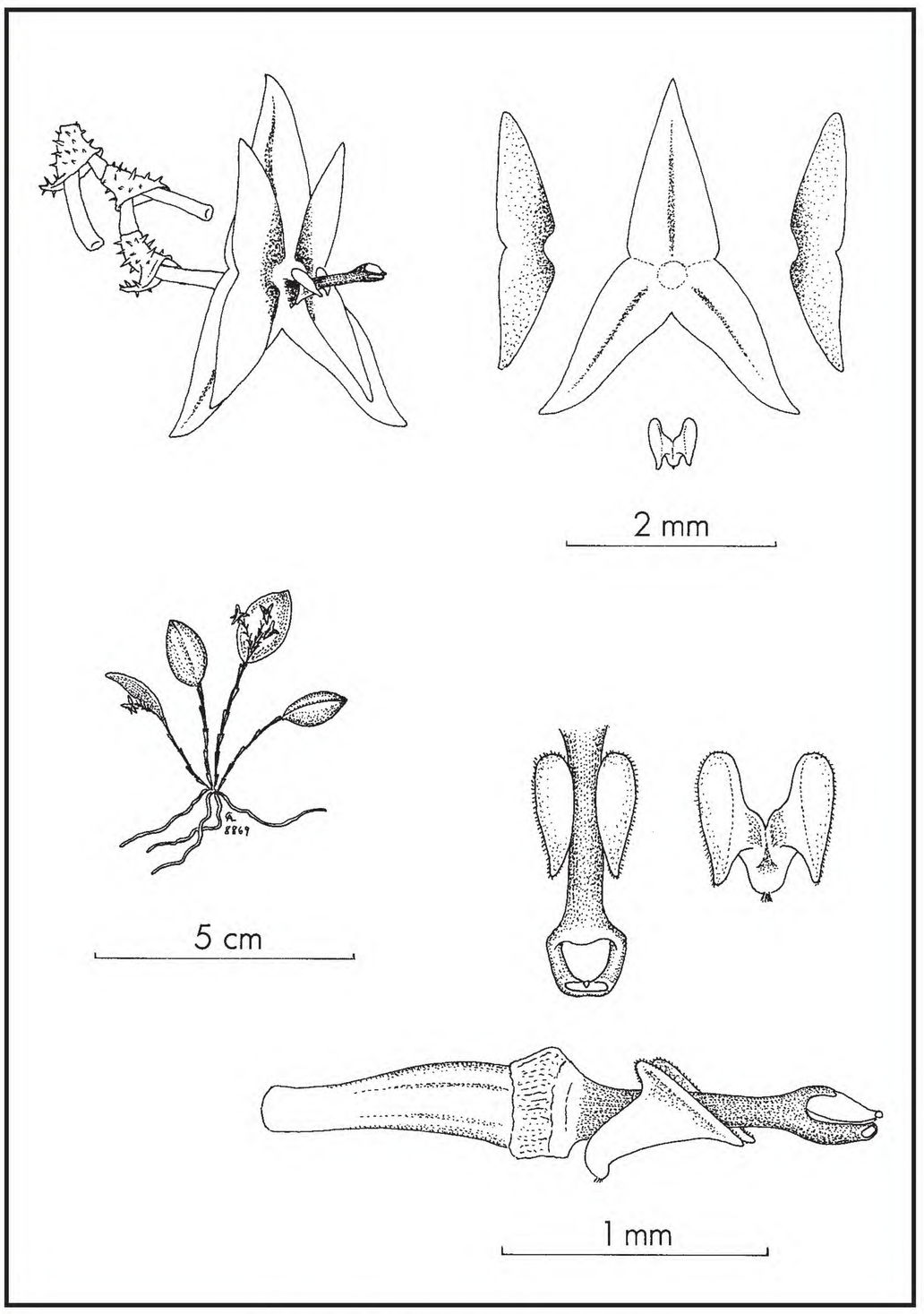



Fig. 106. Lepanthes eros

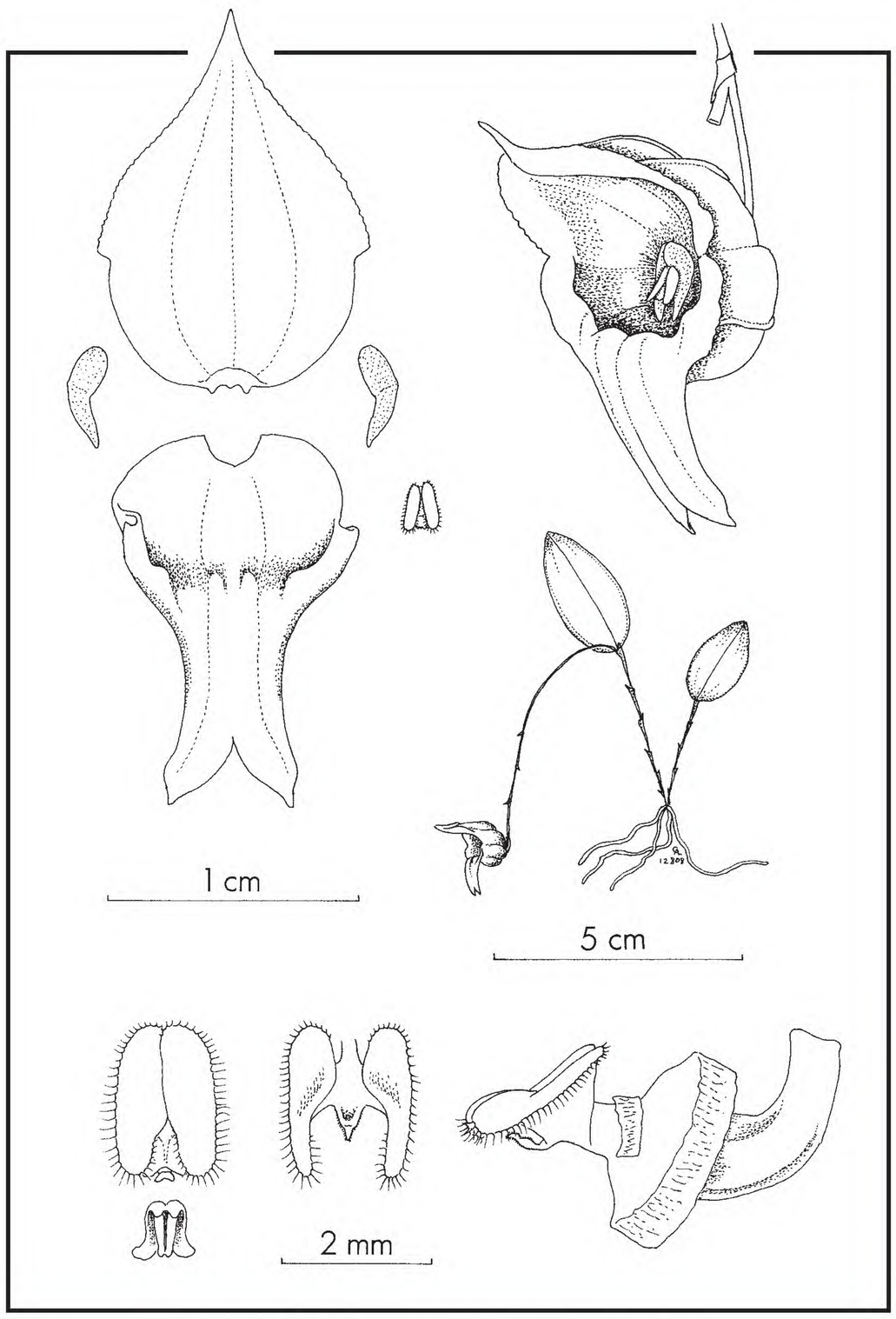



Fig. 107. Lepanthes erythrocles

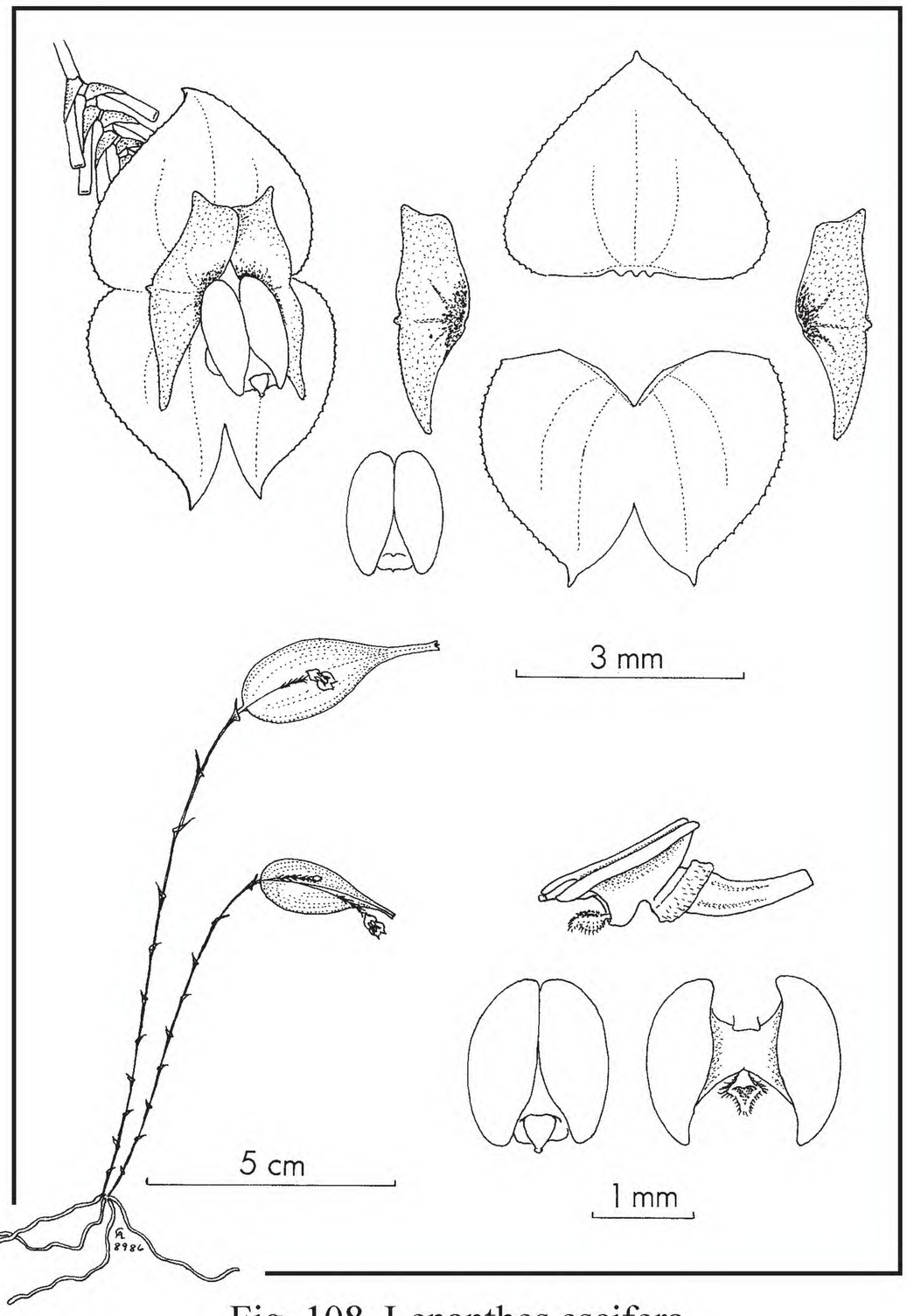



Fig. 108. Lepanthes escifera

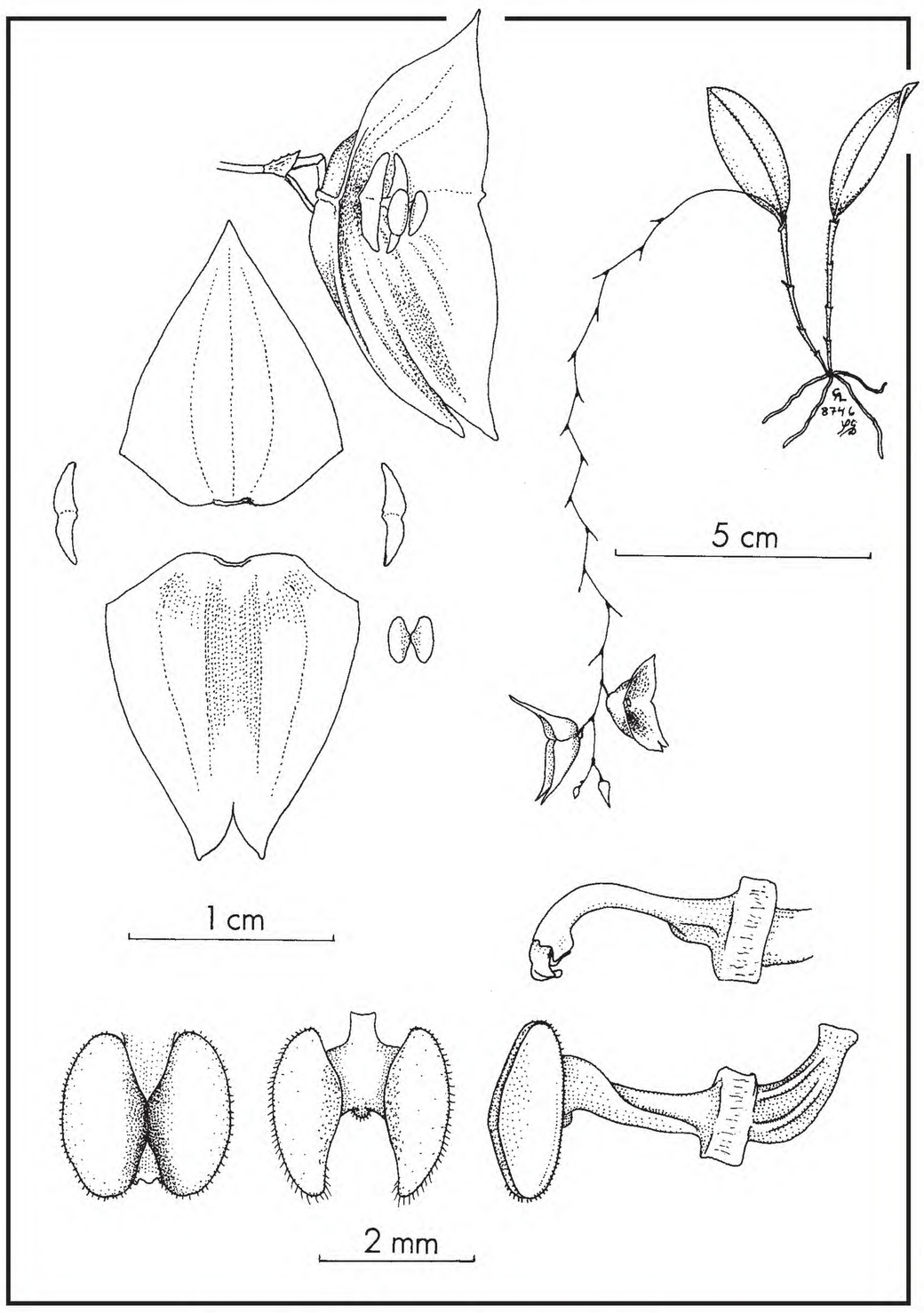



Fig. 109. Lepanthes escobariana

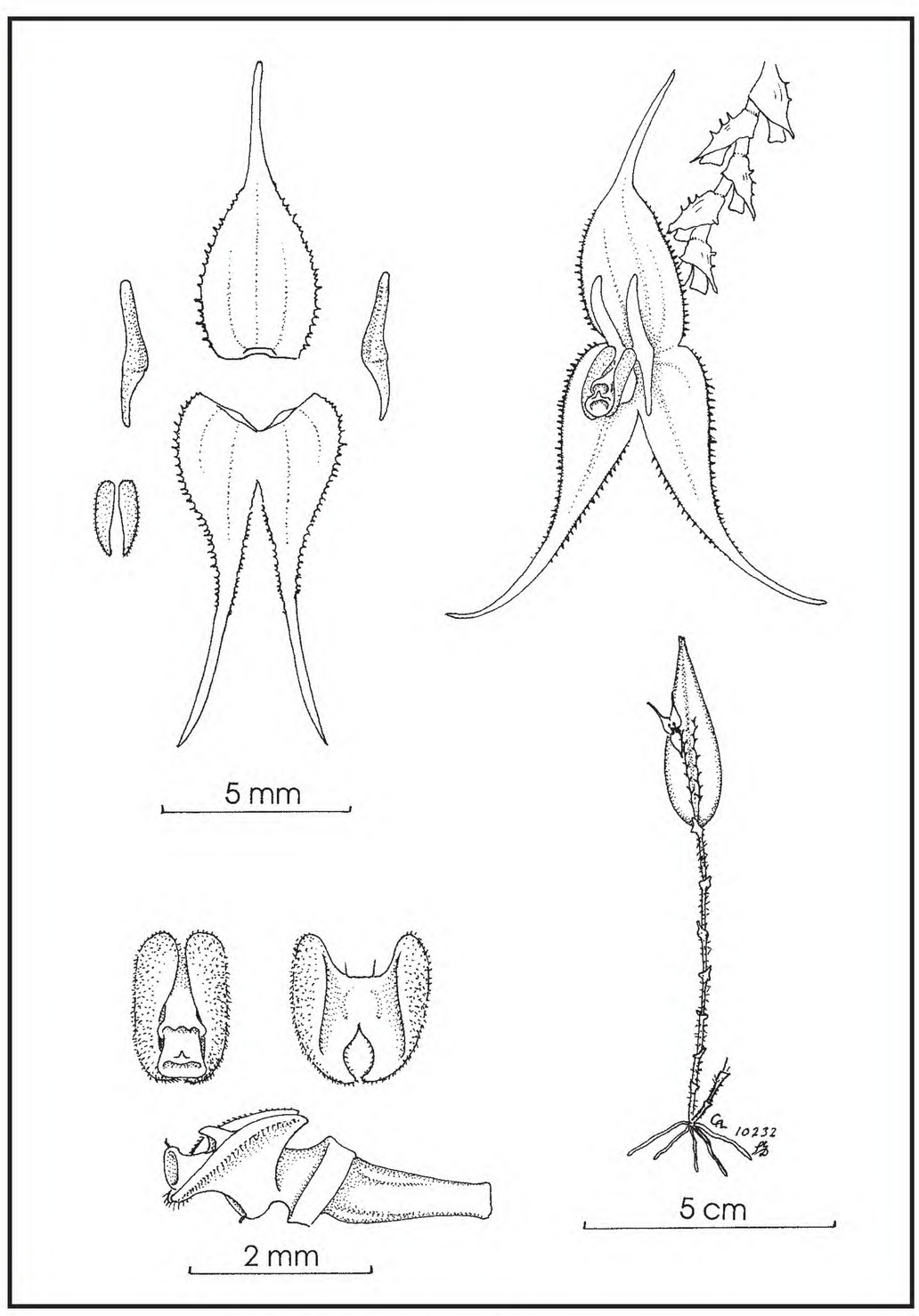



Fig. 110. Lepanthes eucerca

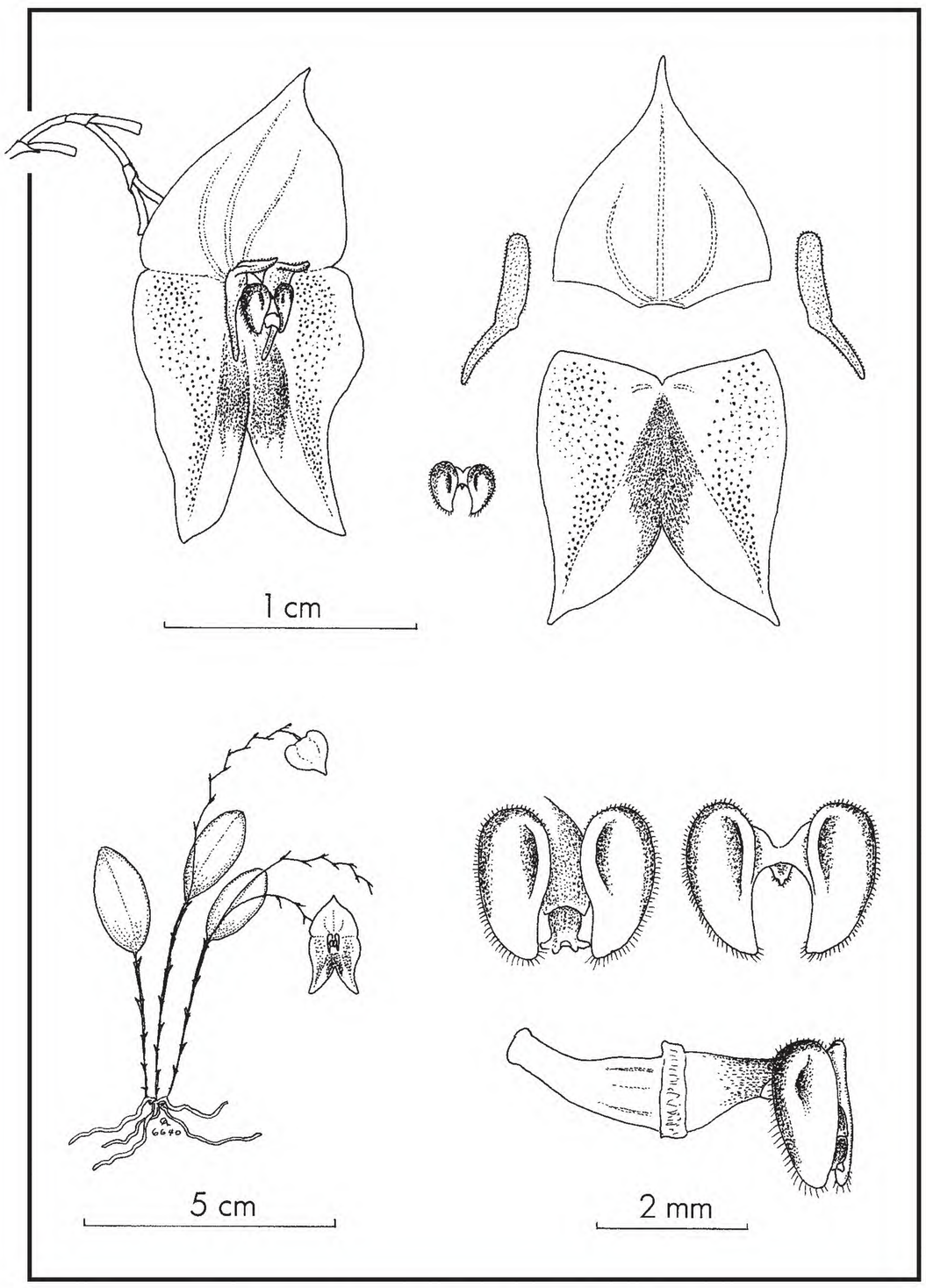



Fig. 111. Lepanthes exaltata

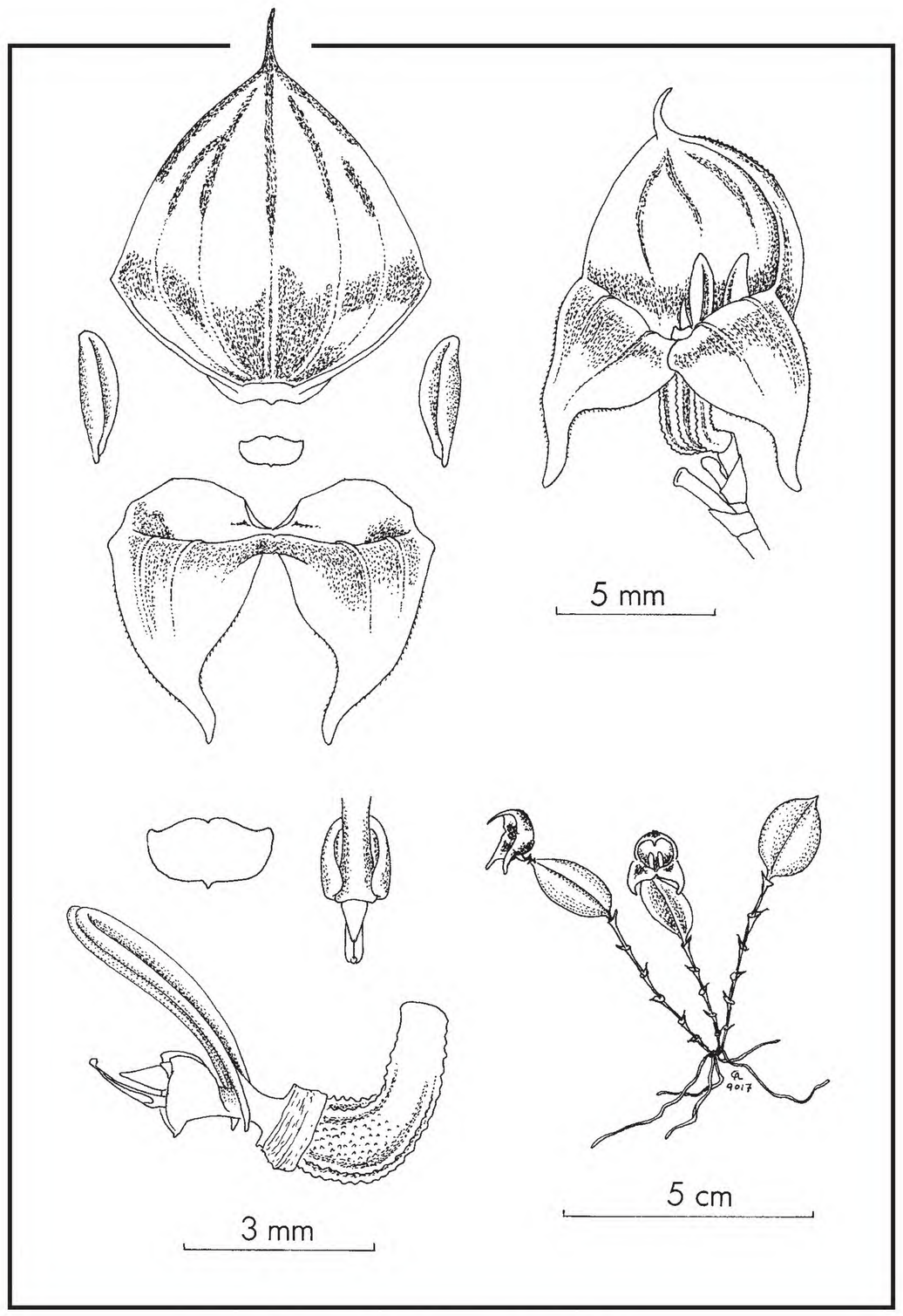



Fig. 112. Lepanthes felis

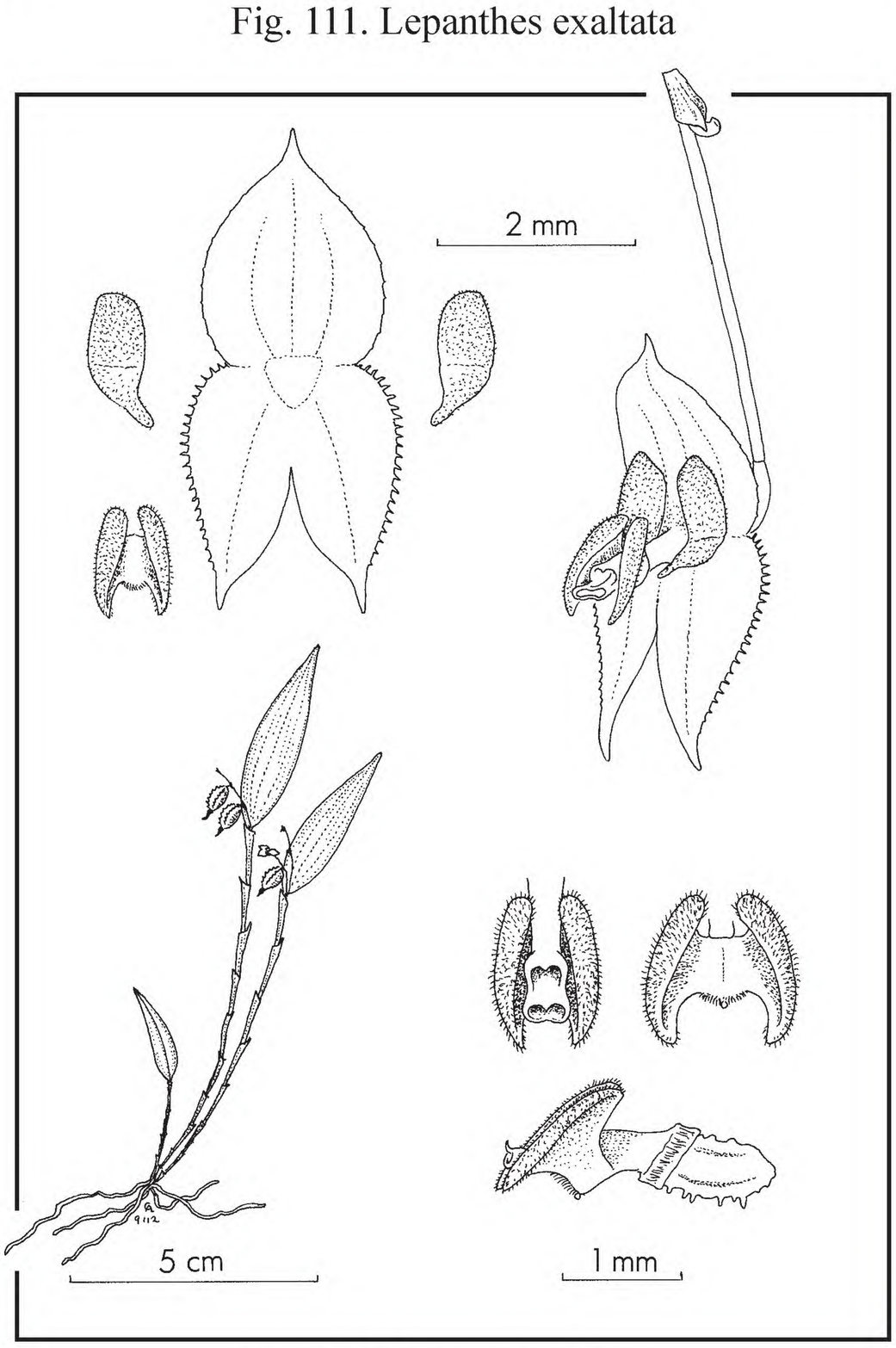



Fig. 113. Lepanthes ferax

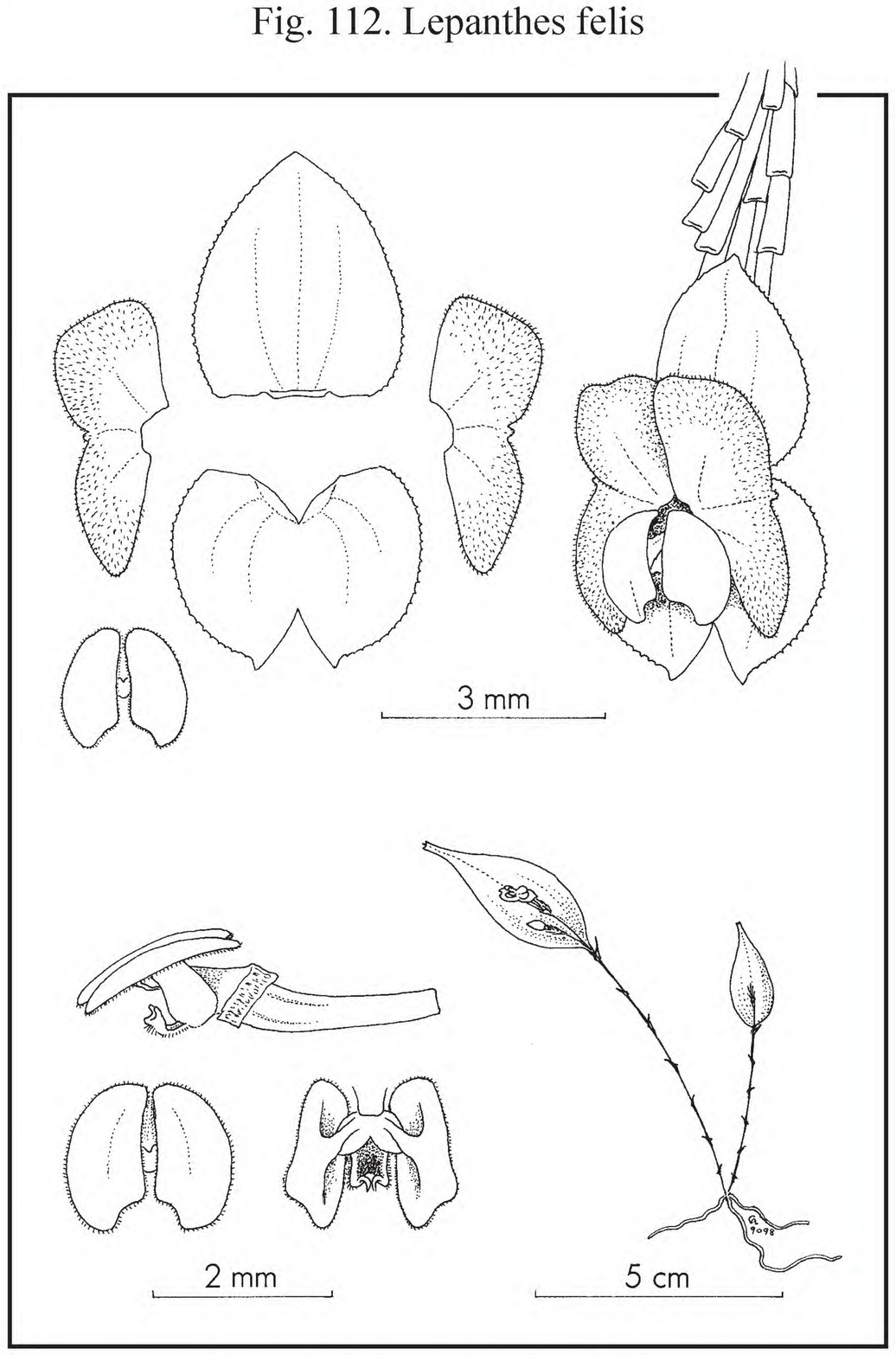



Fig. 114. Lepanthes fibulifera

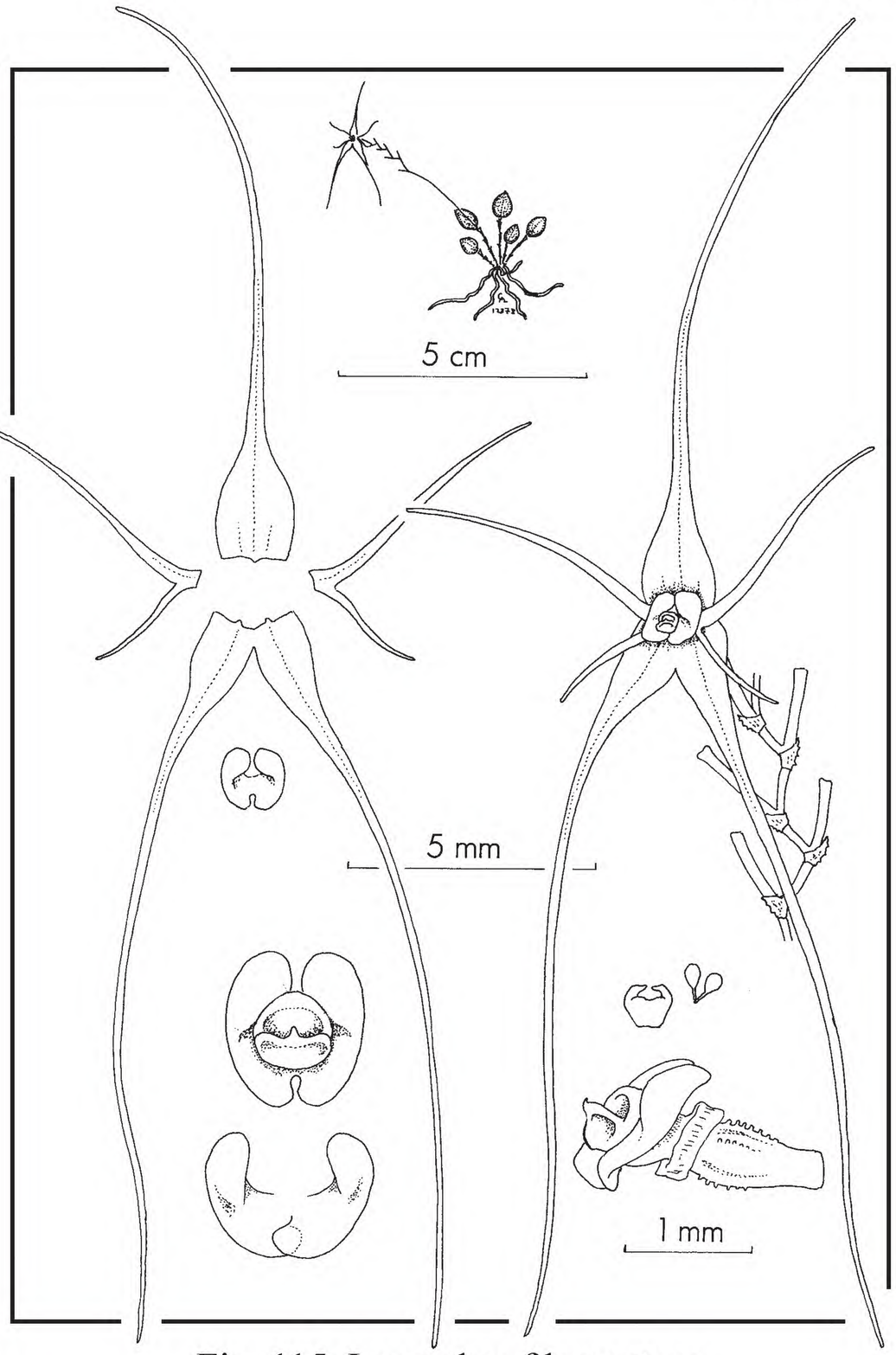



Fig. 115. Lepanthes filamentosa

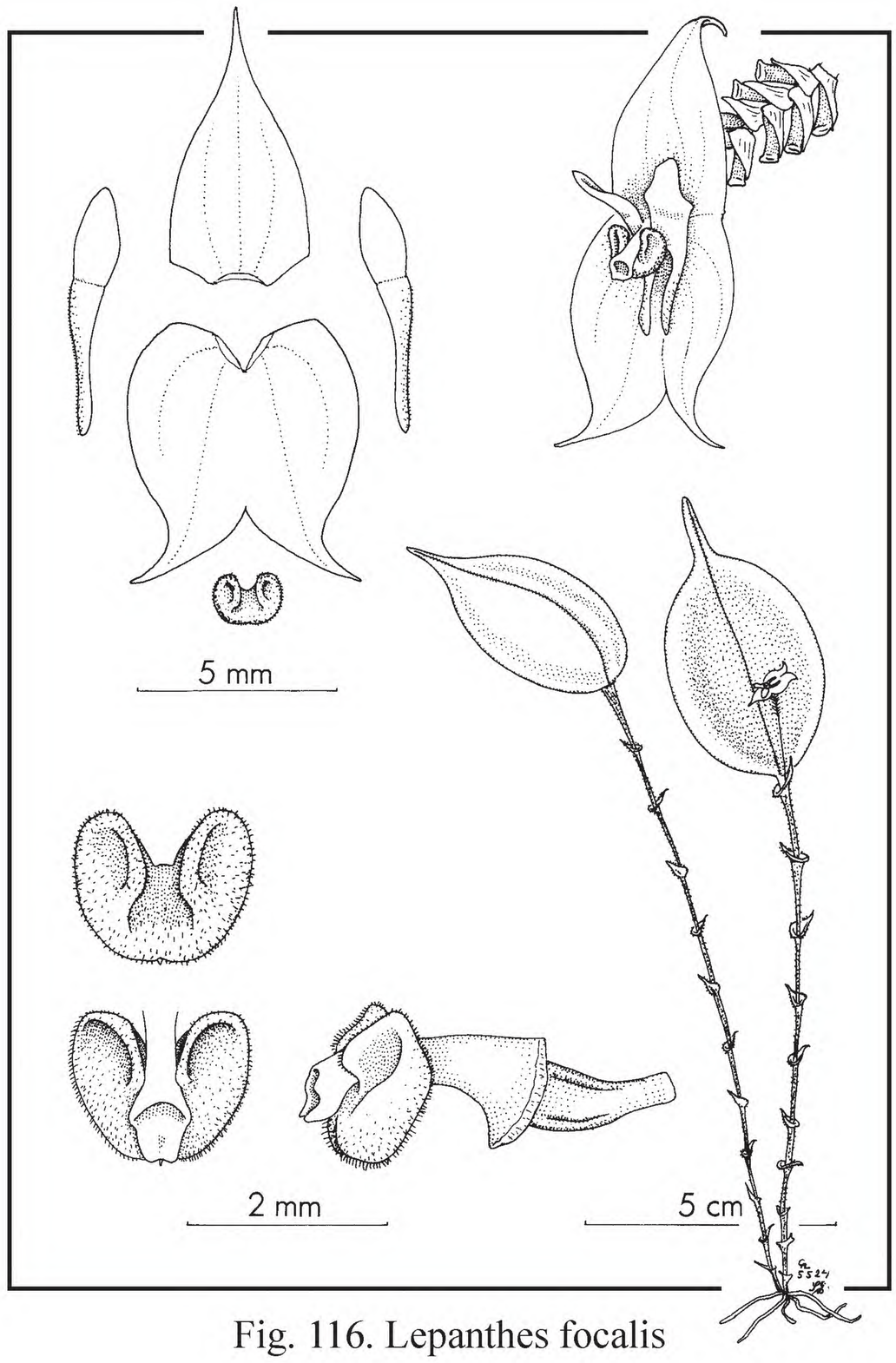



Fig. 116. Lepanthes focalis

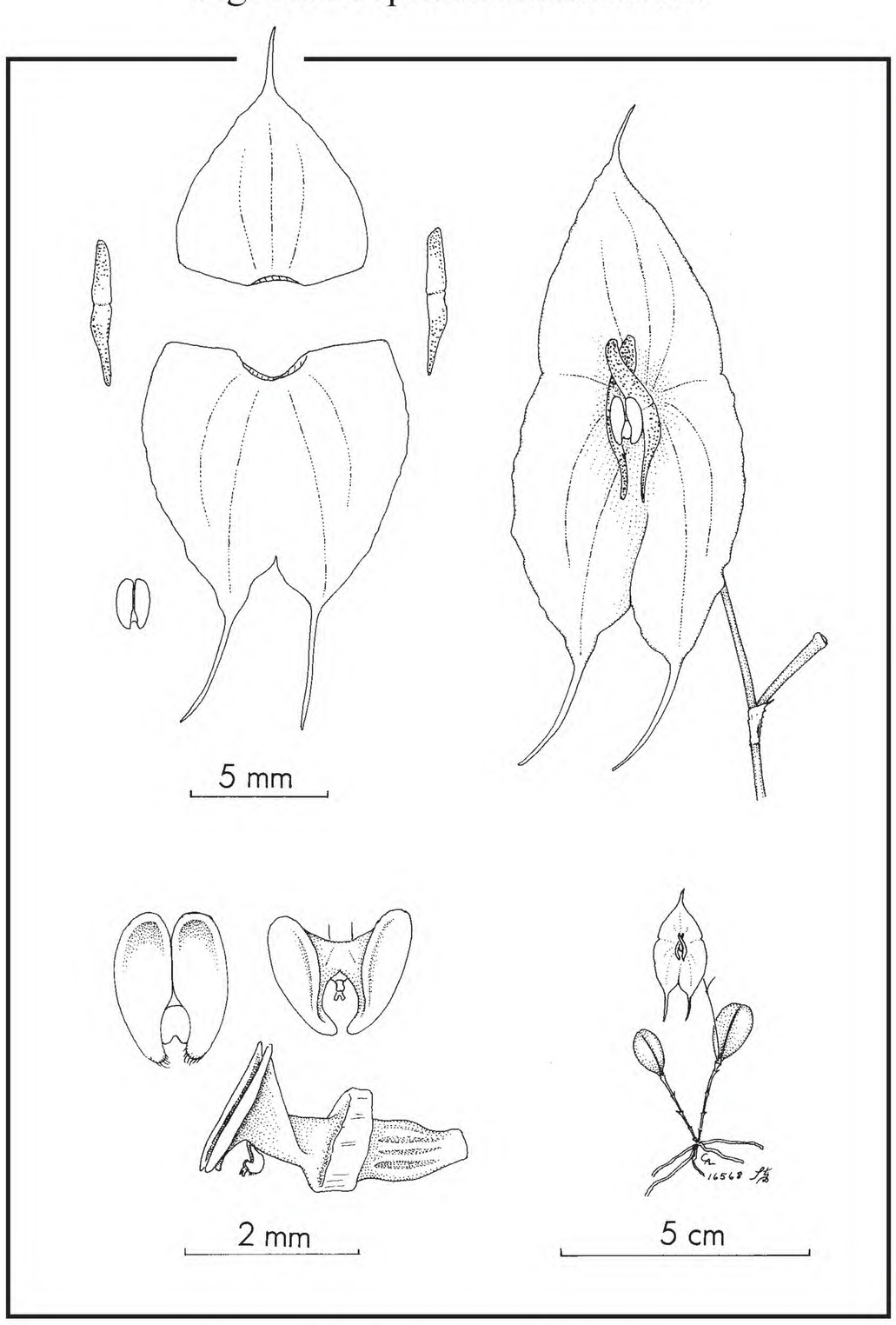



Fig. 117. Lepanthes fonnegrae

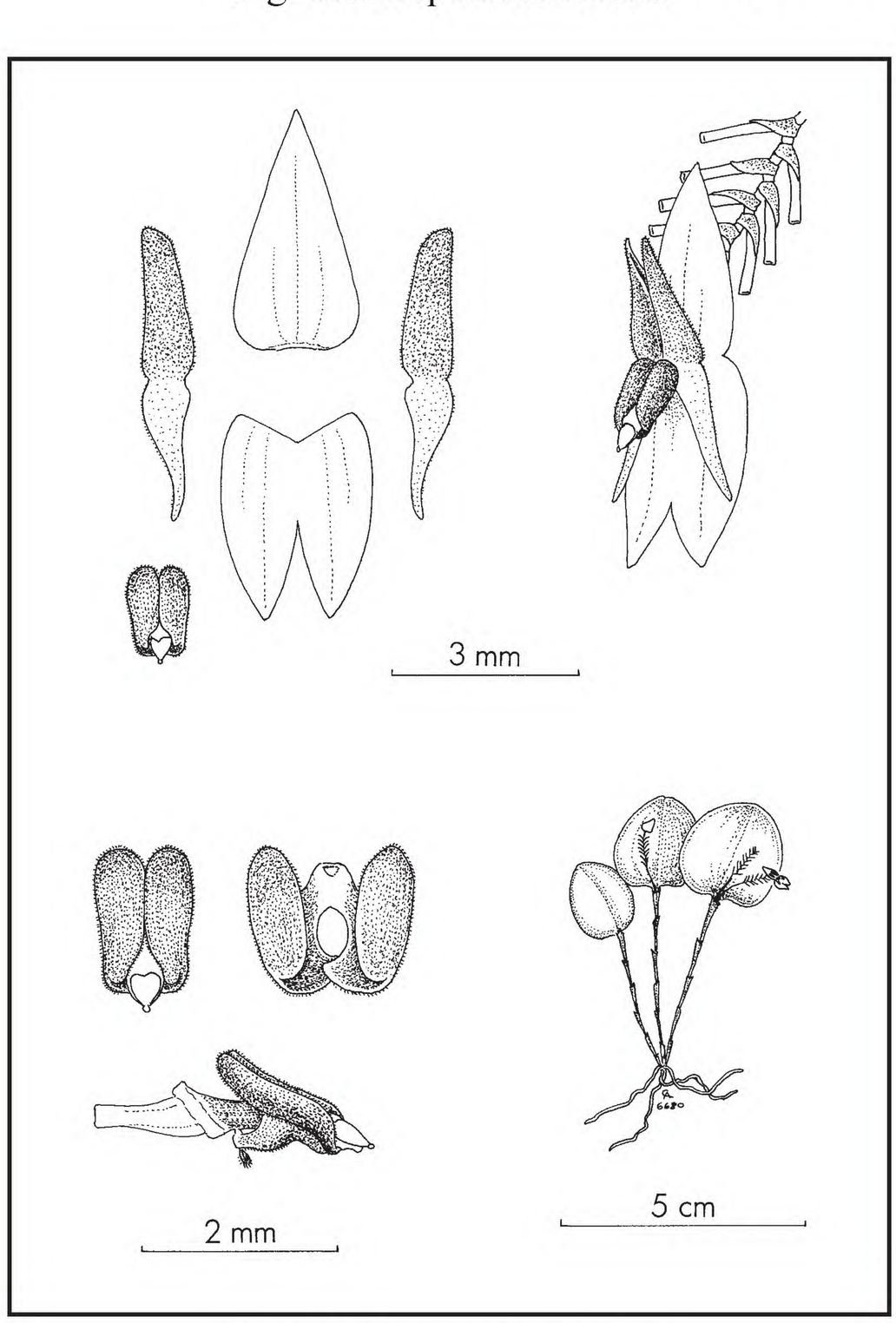



Fig. 118. Lepanthes forceps

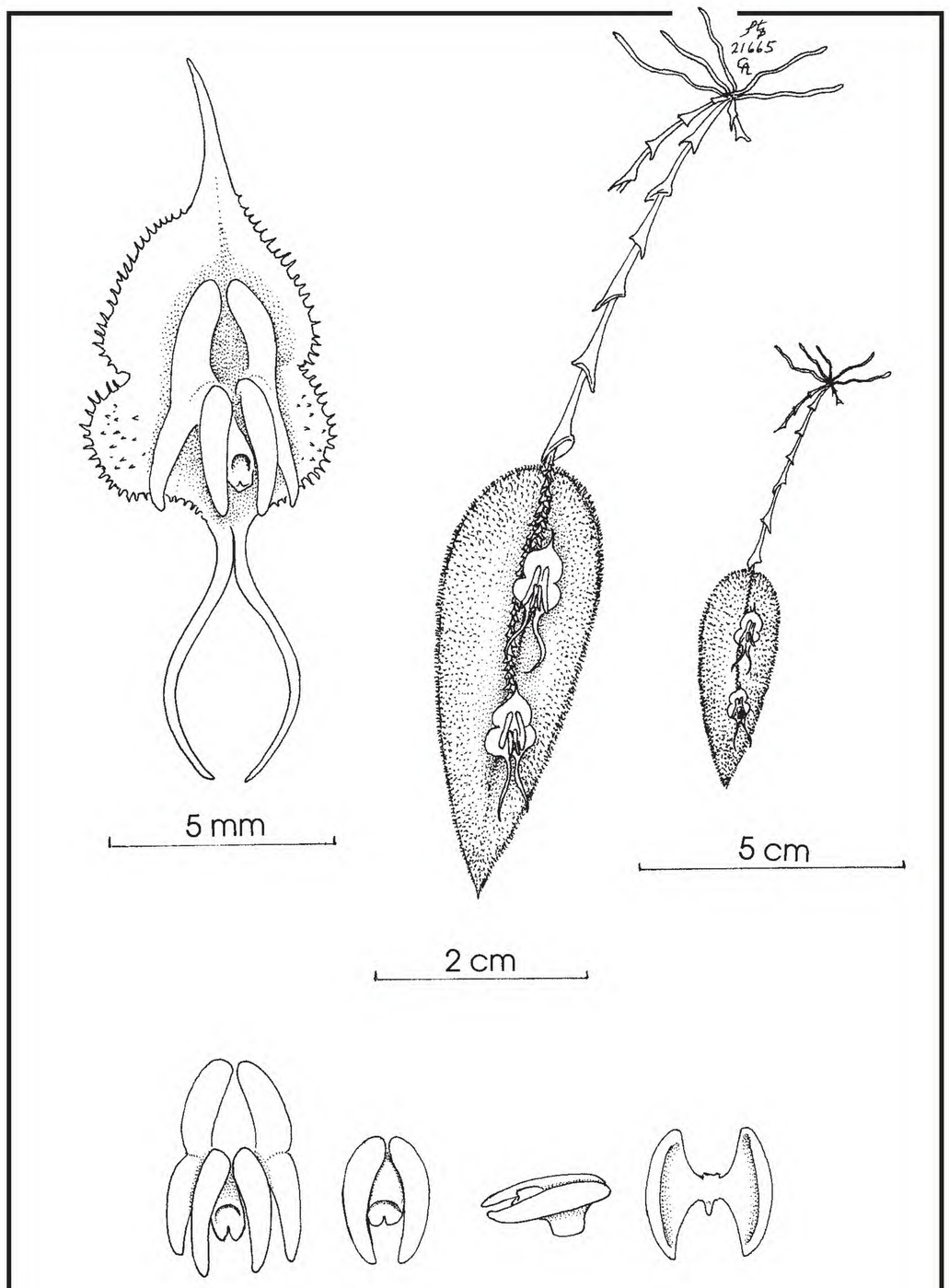



Fig. 119. Lepanthes foreroi

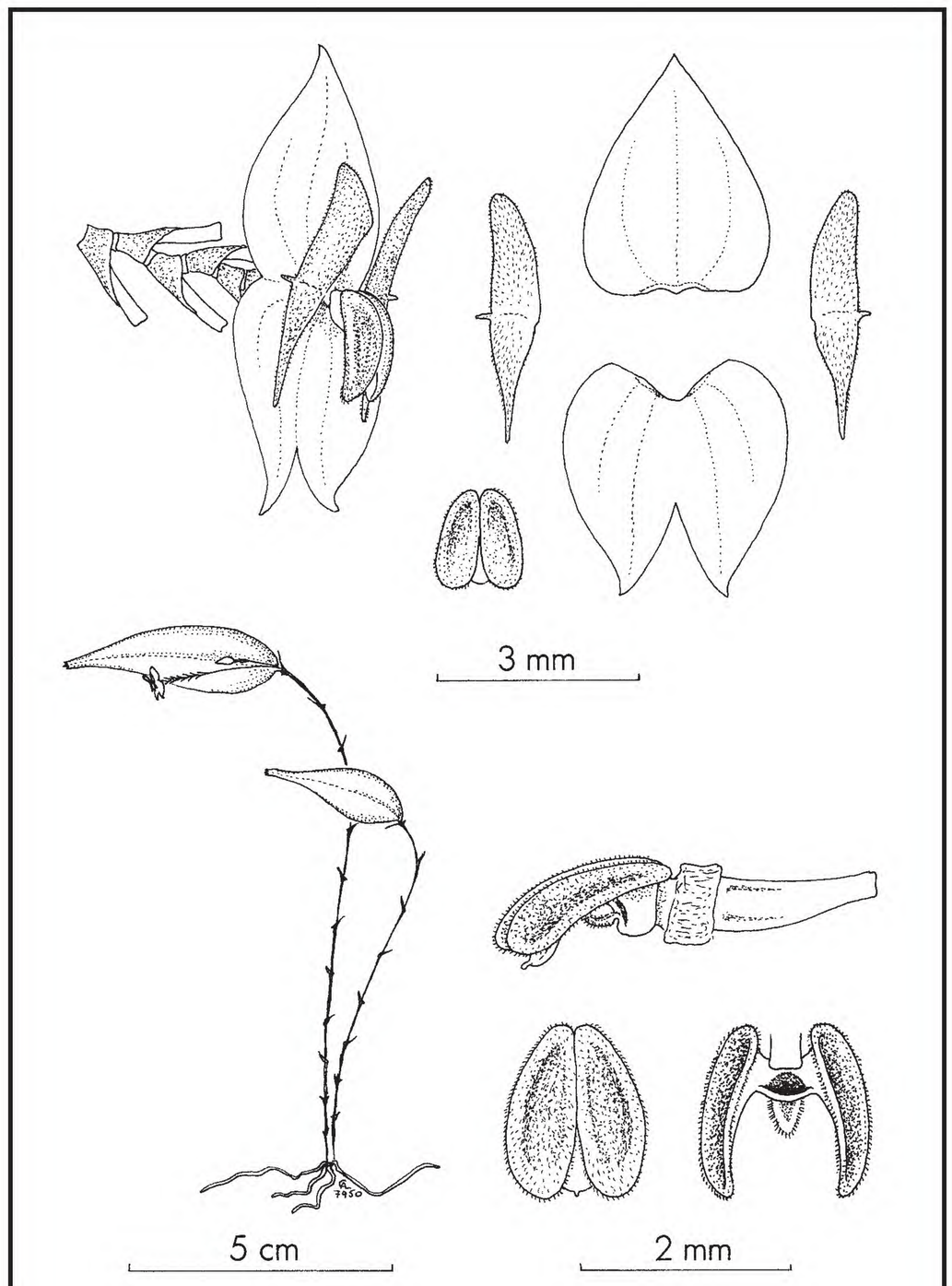



Fig. 120. Lepanthes foveata

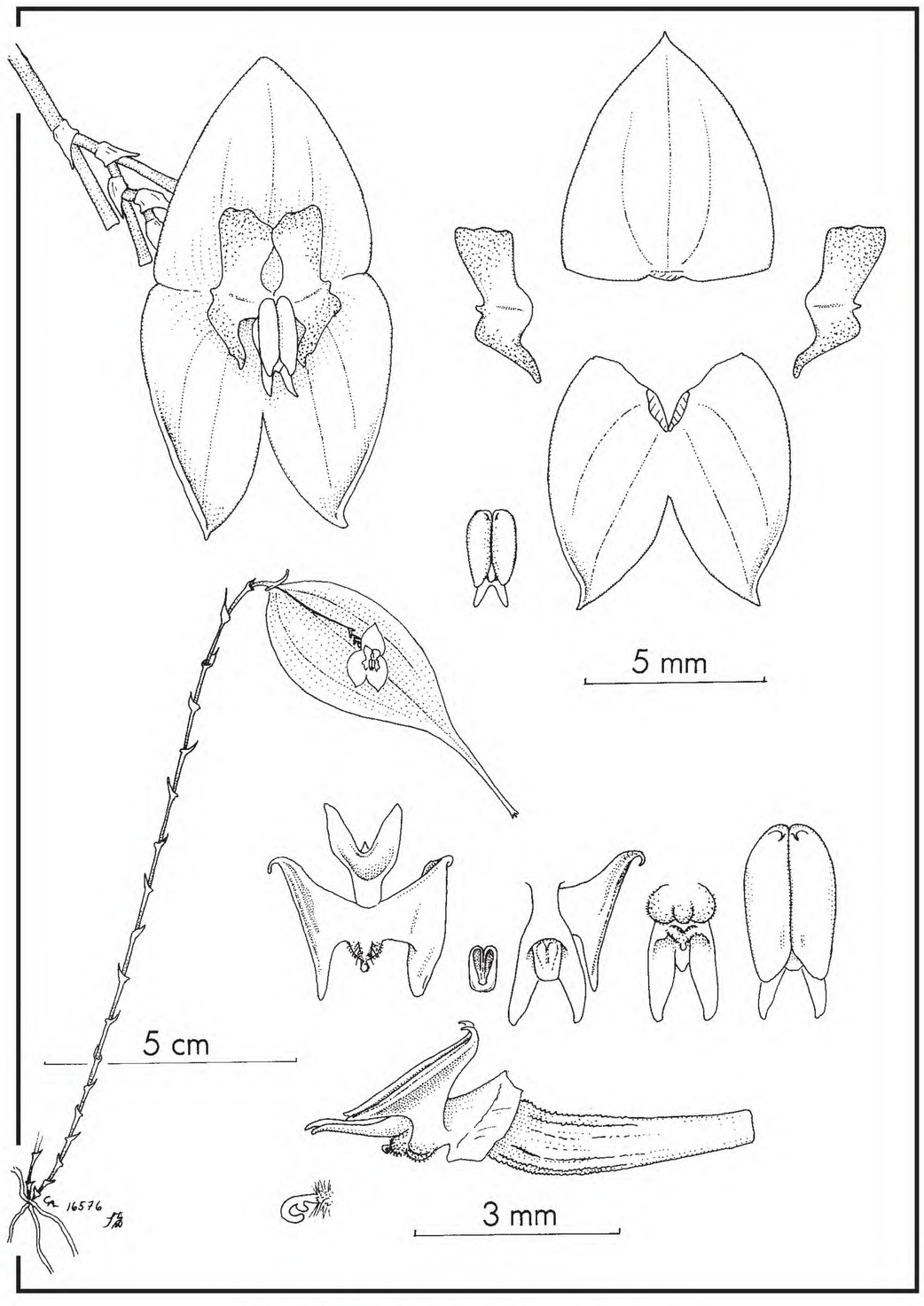



Fig. 121. Lepanthes furcata

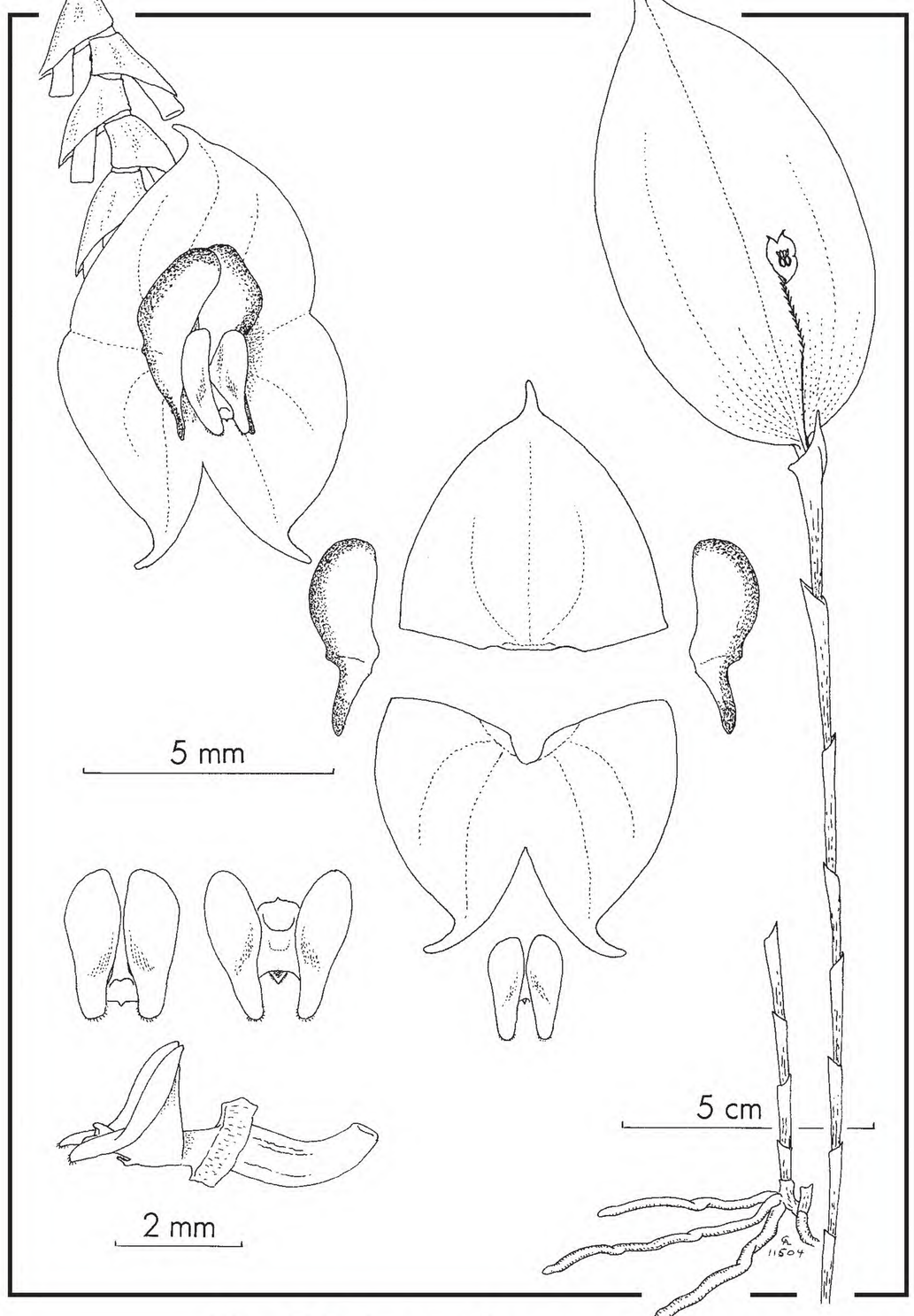



Fig. 122. Lepanthes gargantua

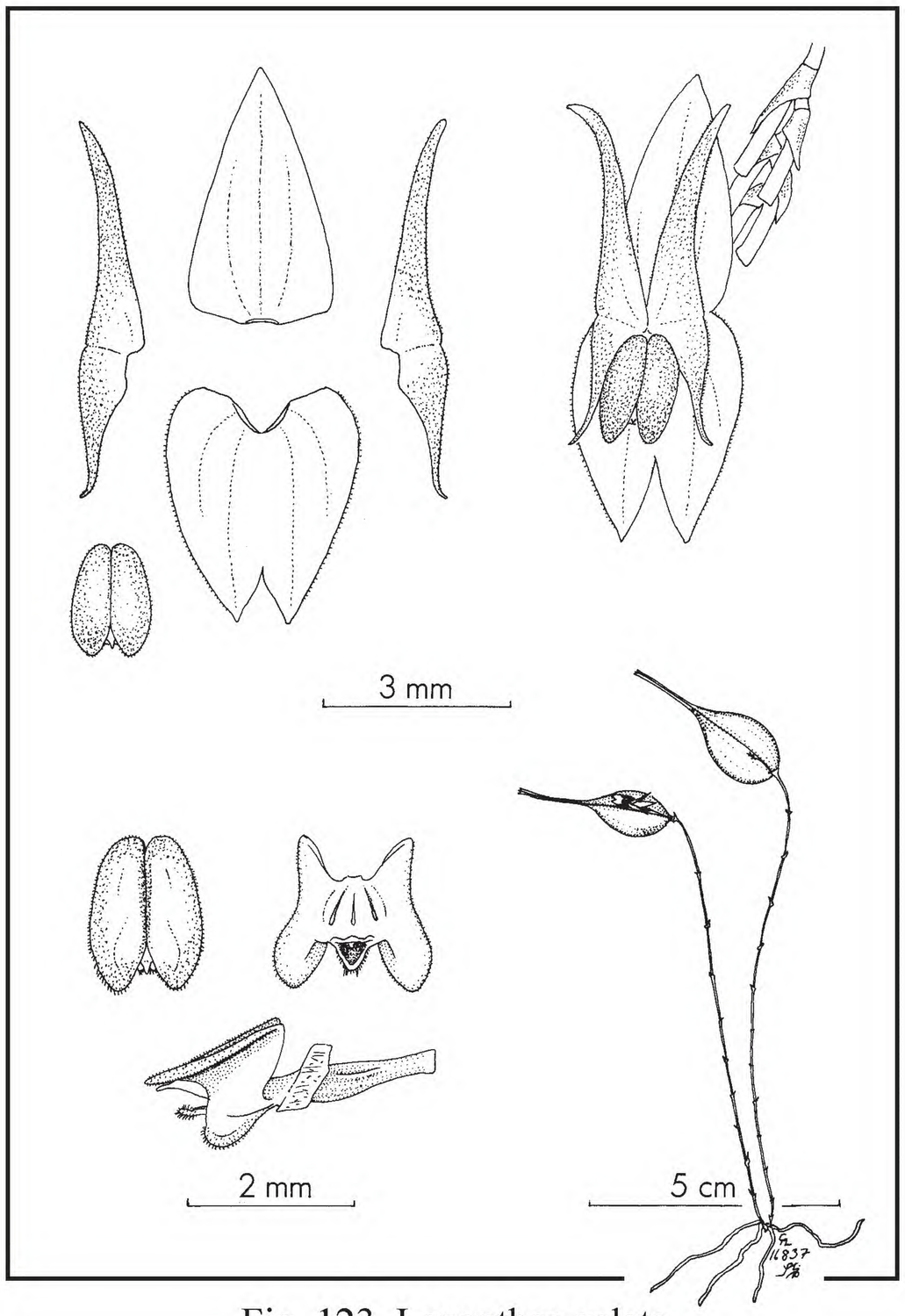



Fig. 123. Lepanthes gelata

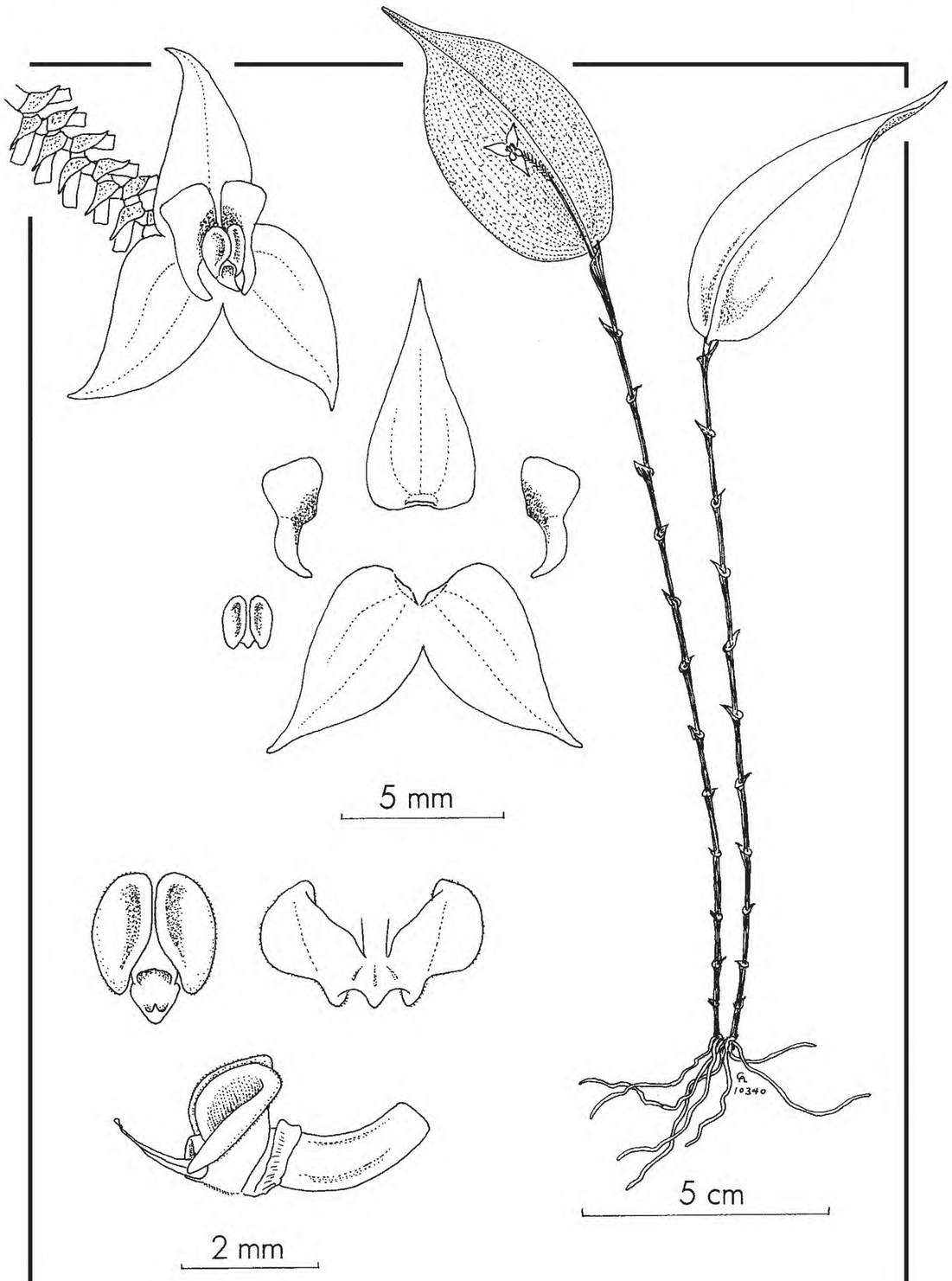



Fig. 124. Lepanthes gemina

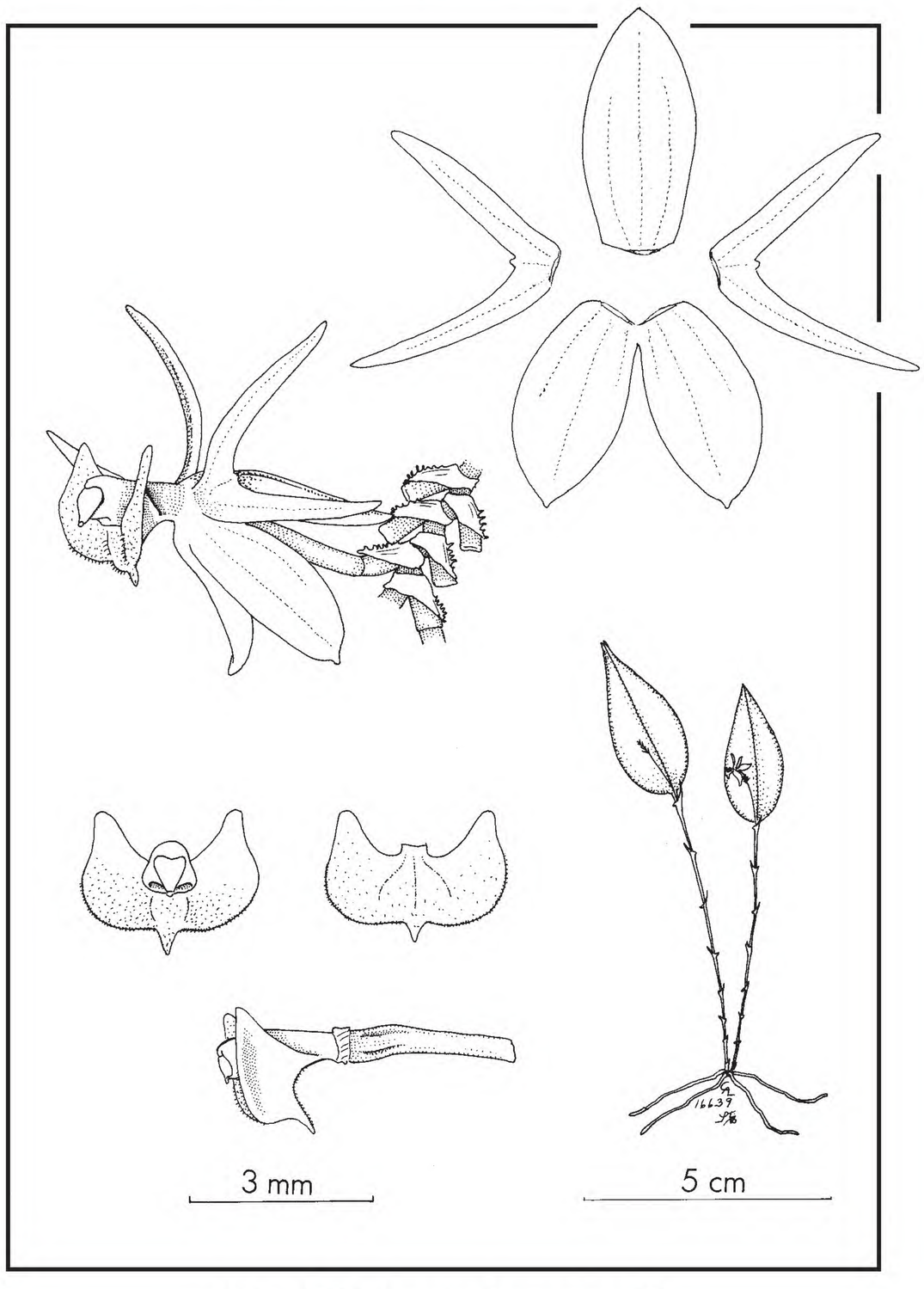



Fig. 125. Lepanthes georgii

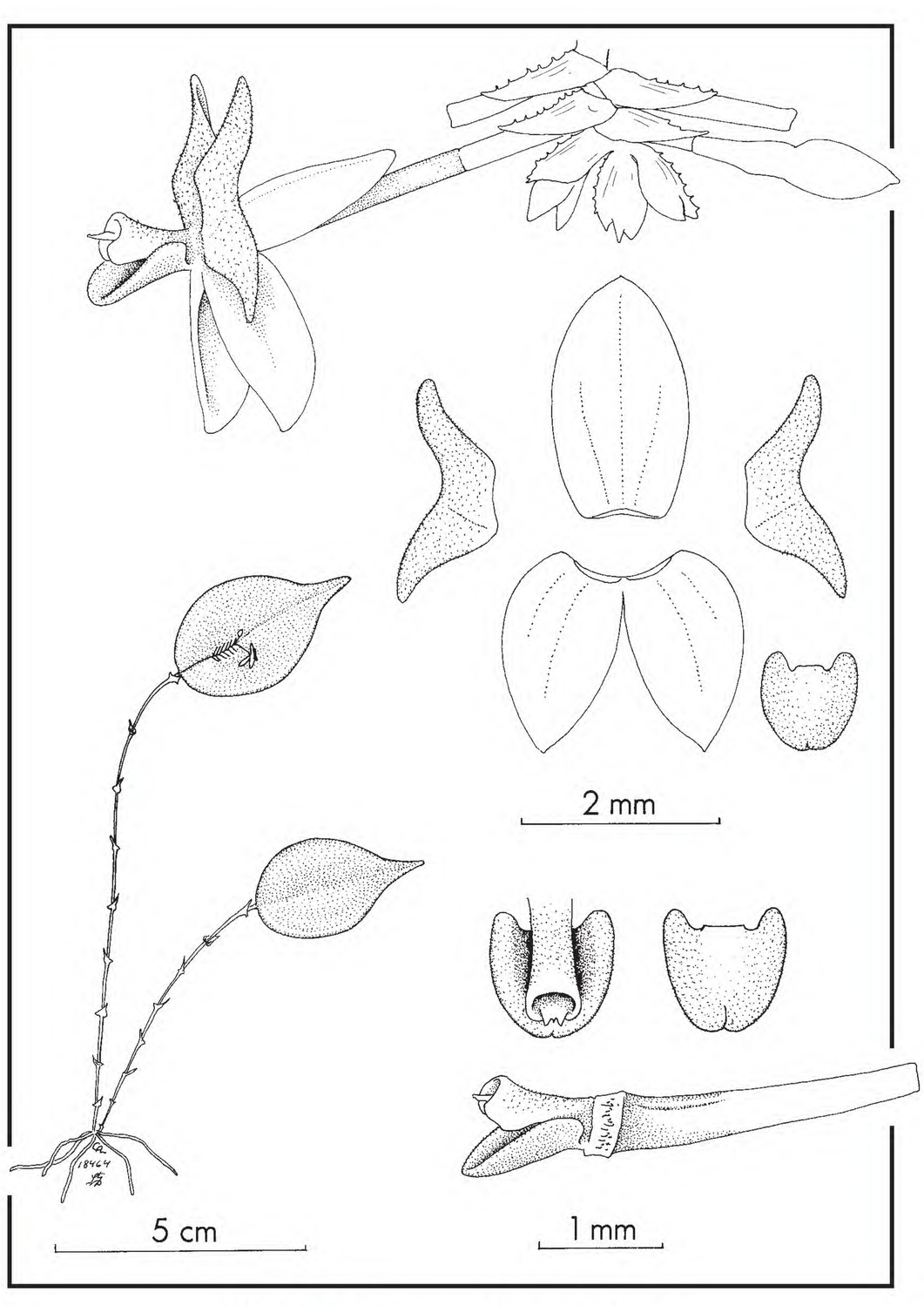



Fig. 126. Lepanthes giraldoi

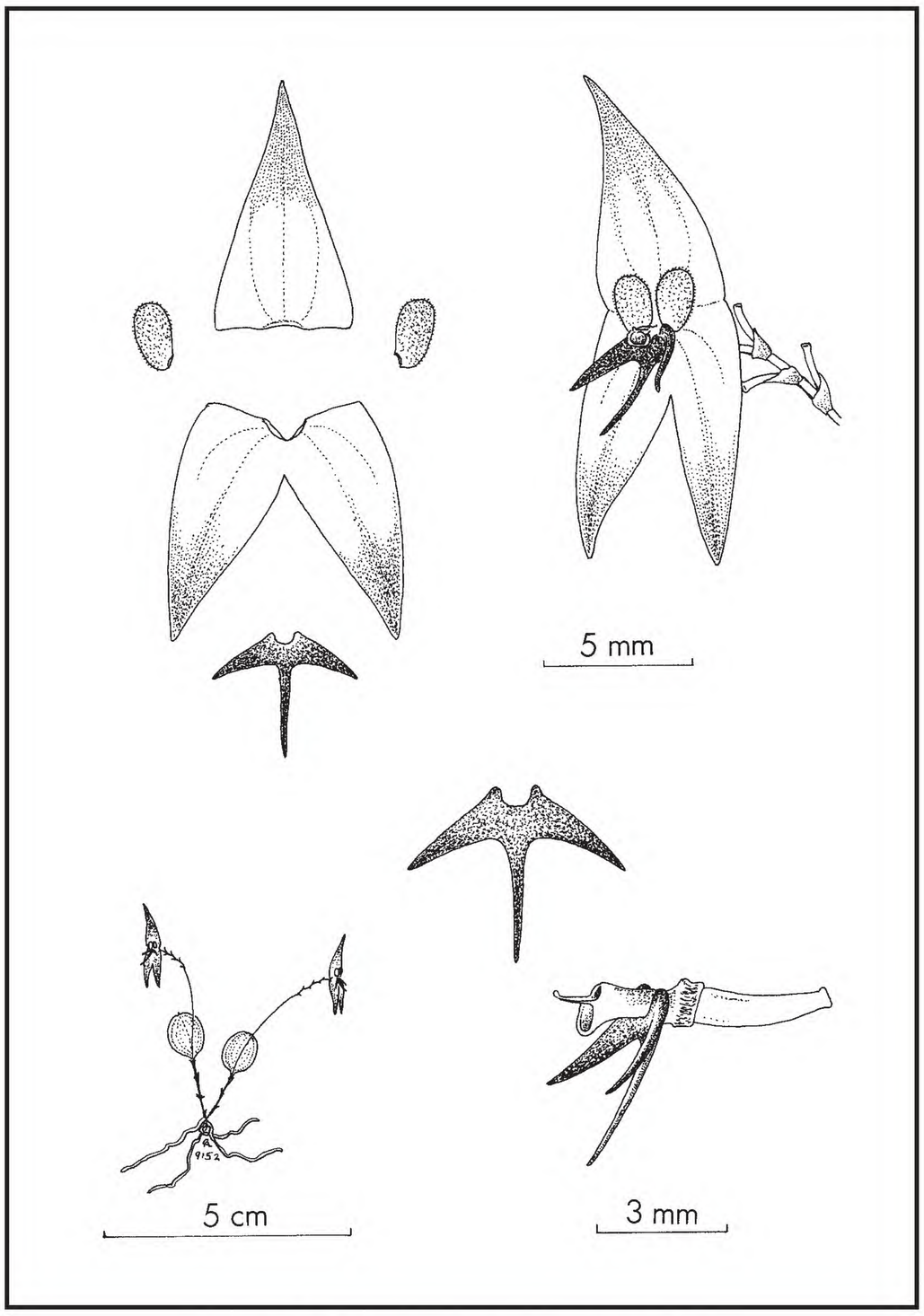



Fig. 127. Lepanthes golondrina

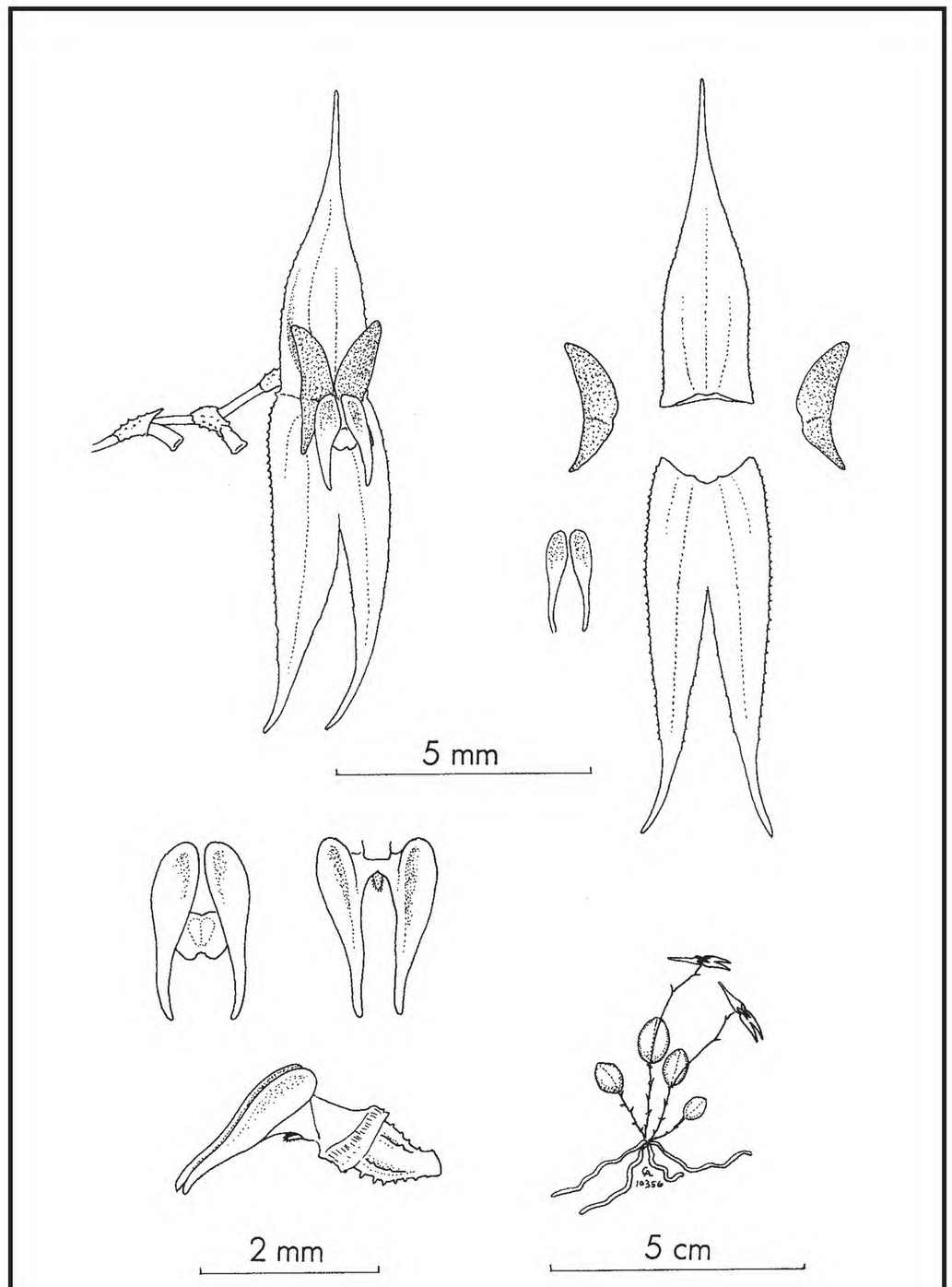



Fig. 128. Lepanthes grildrig

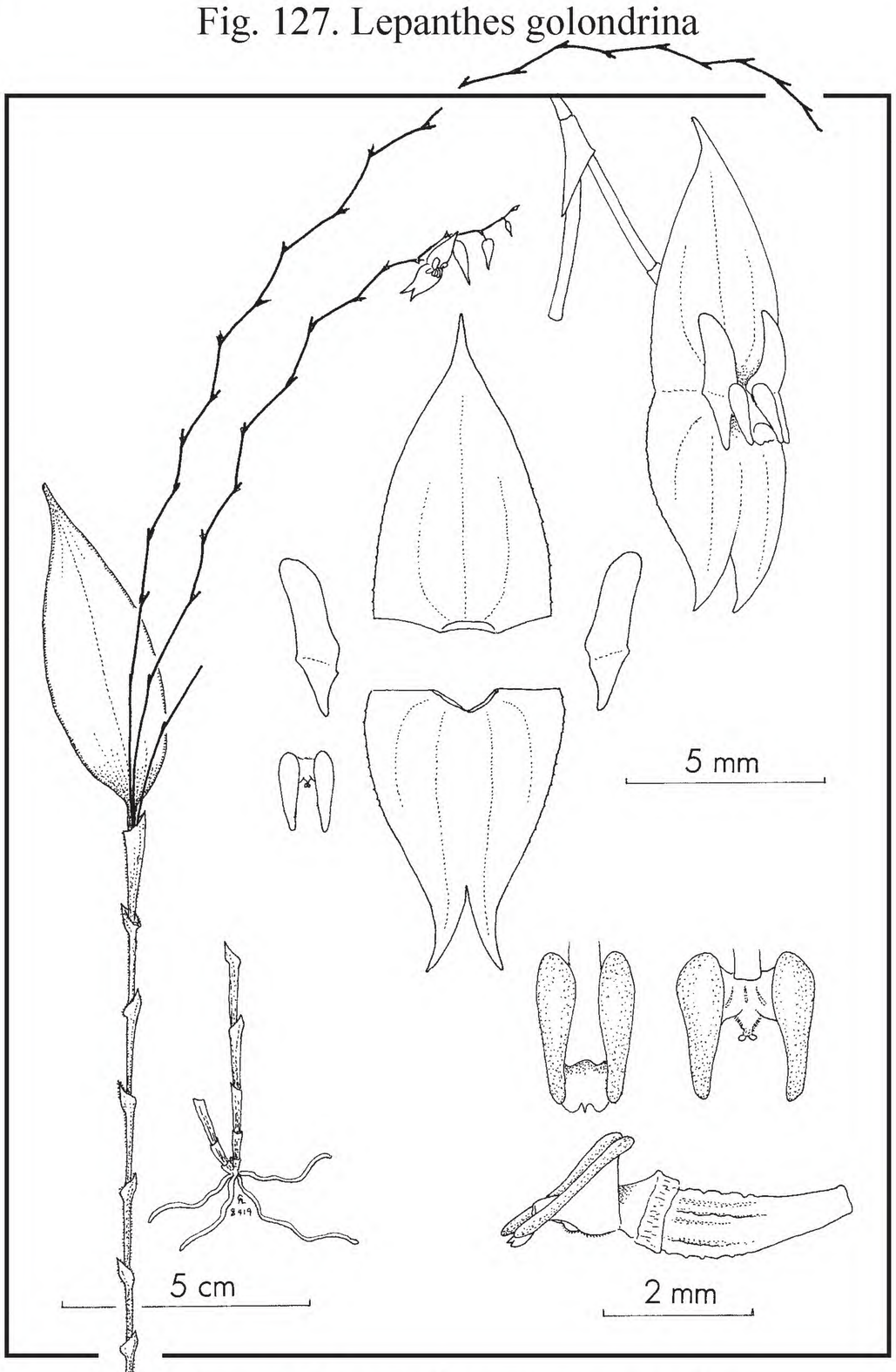



Fig. 129. Lepanthes guanacasensis

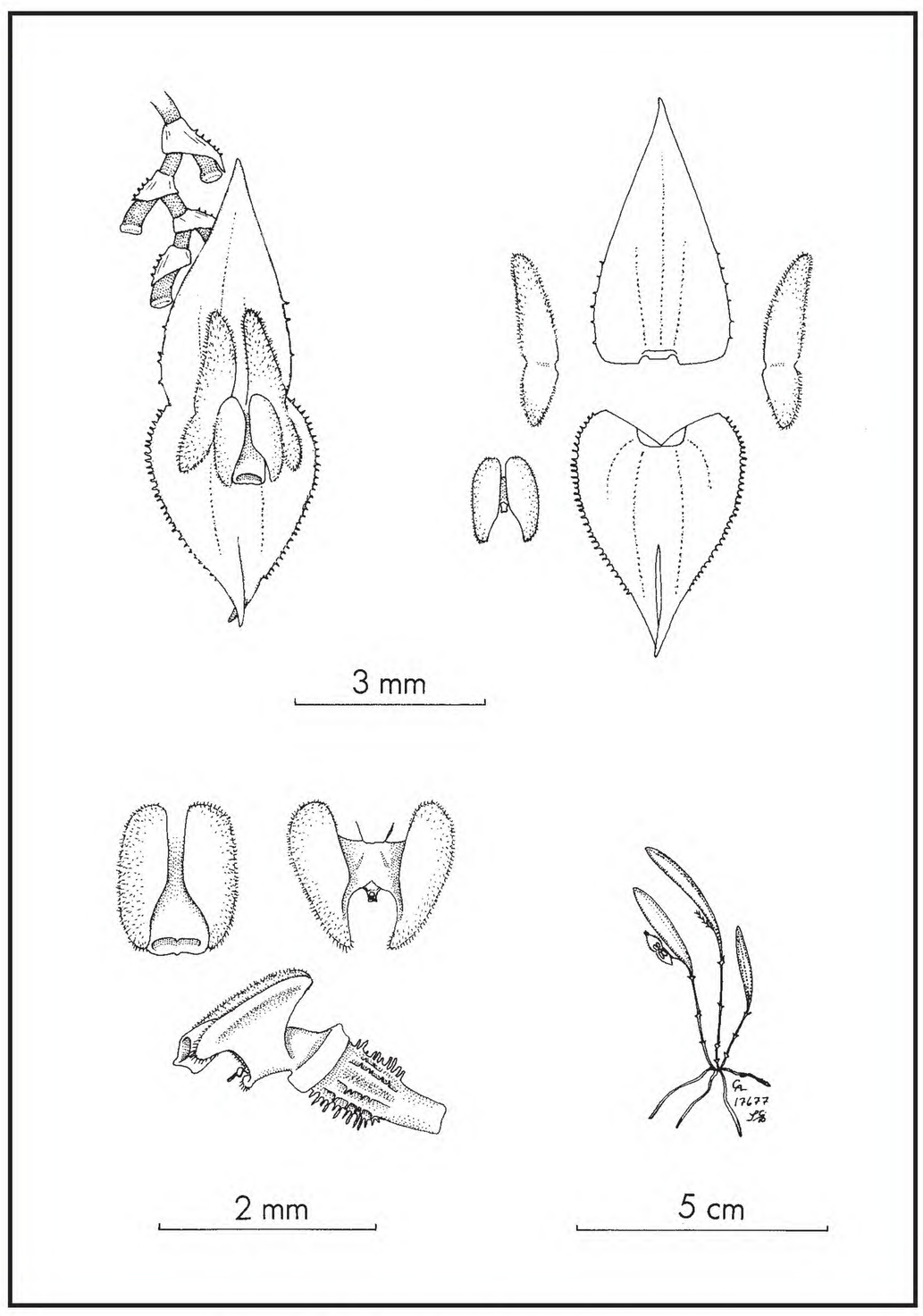



Fig. 130. Lepanthes gustavoi

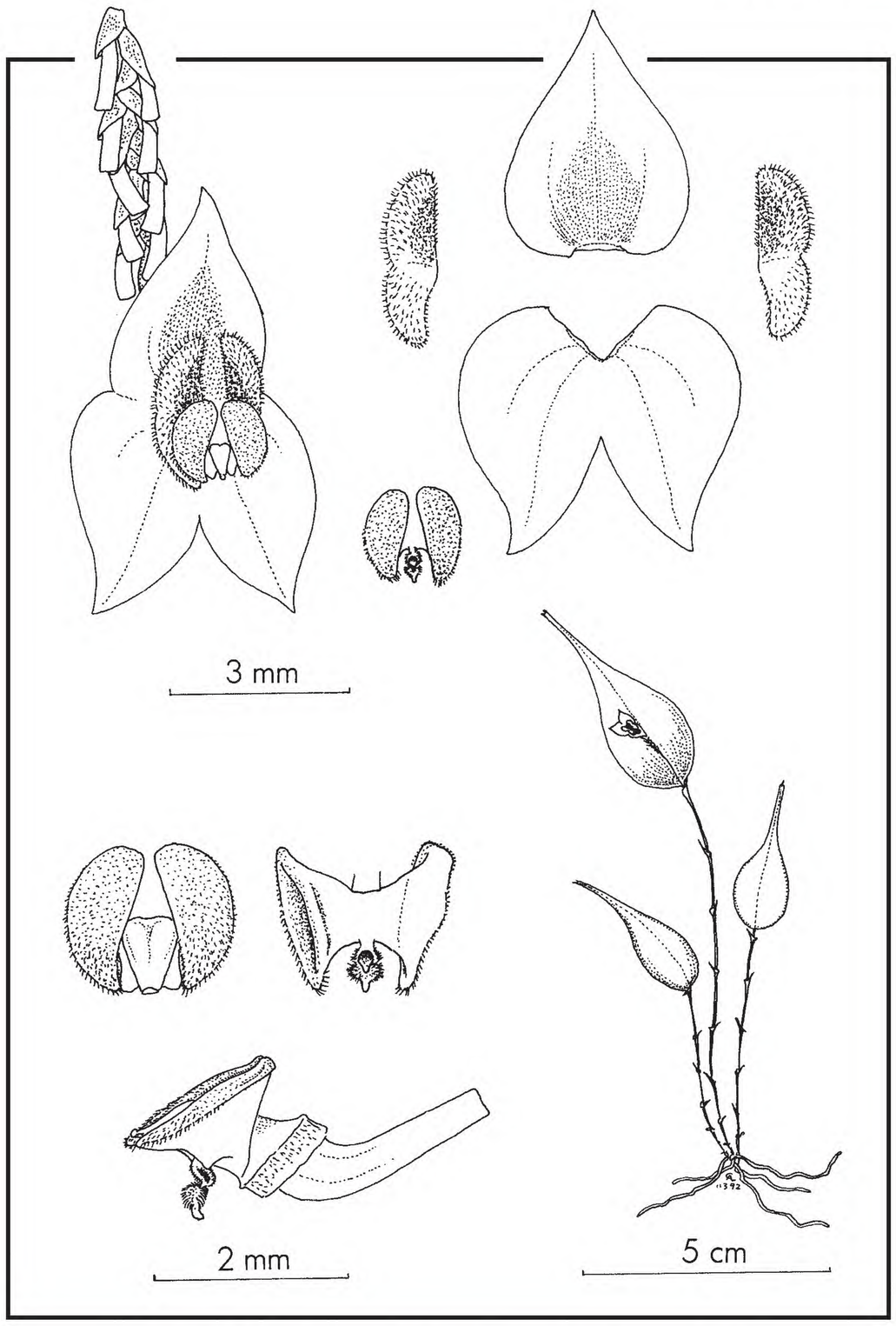



Fig. 131. Lepanthes guttula-sanguinis

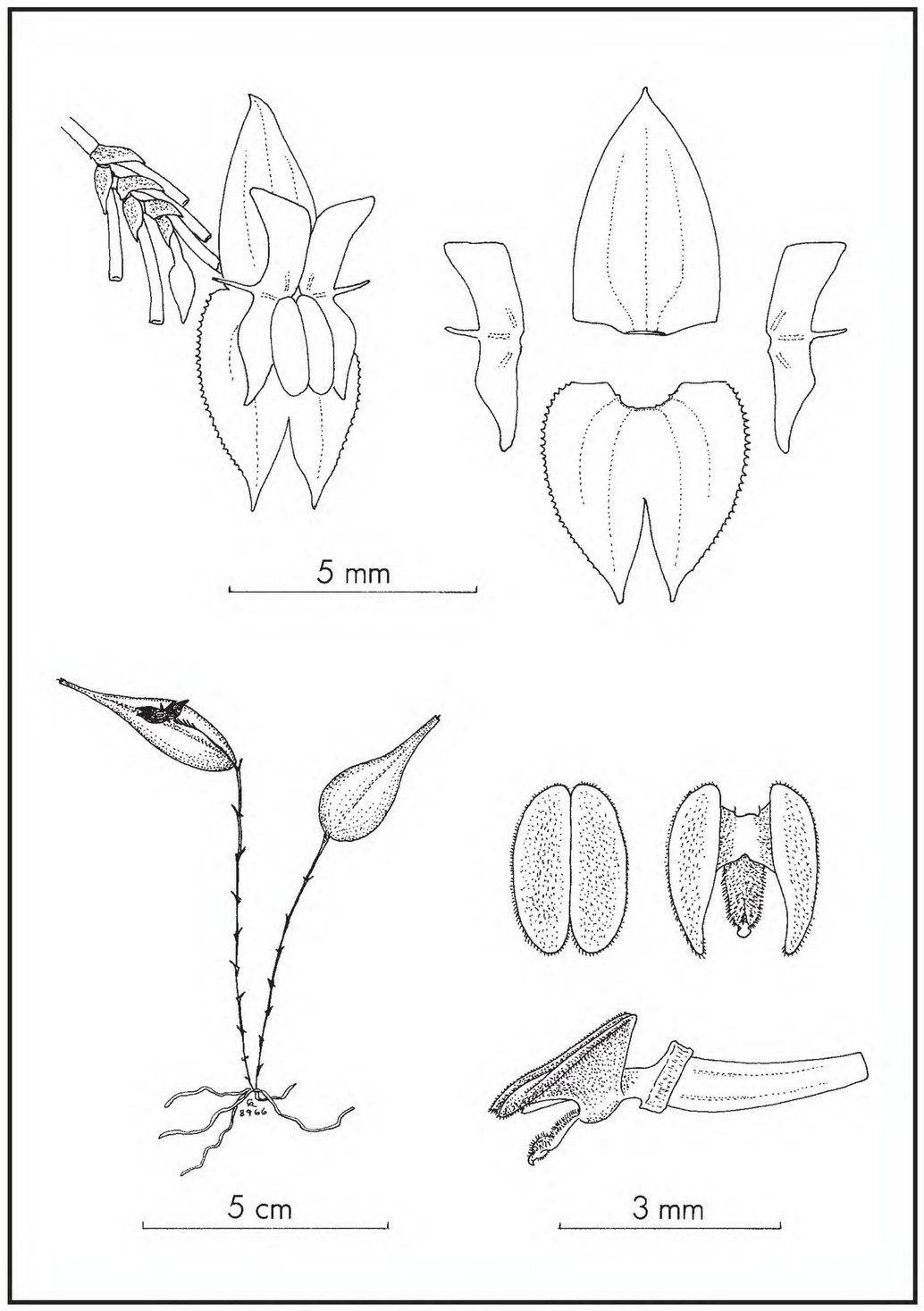



Fig. 132. Lepanthes habenifera

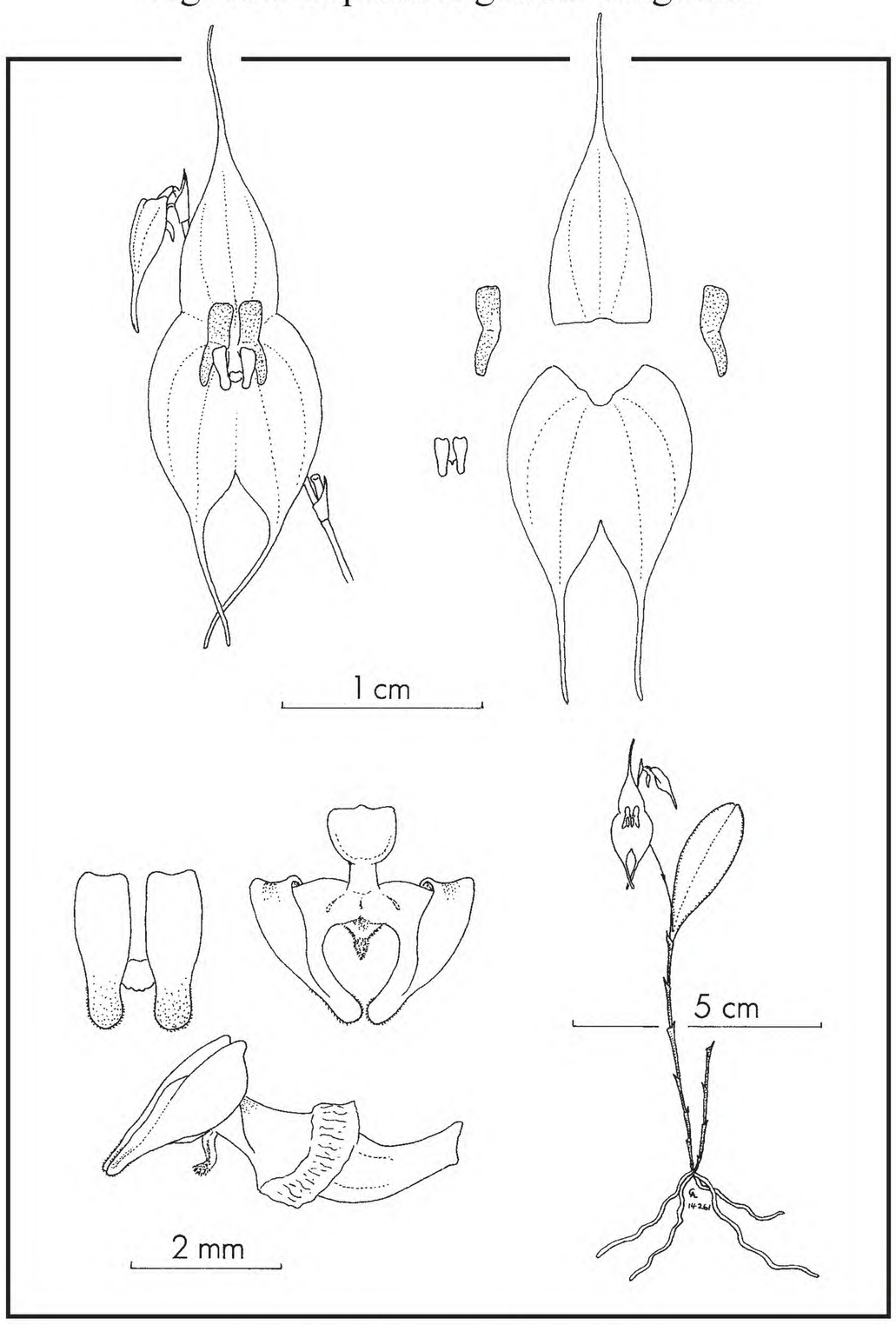



Fig. 133. Lepanthes helgae

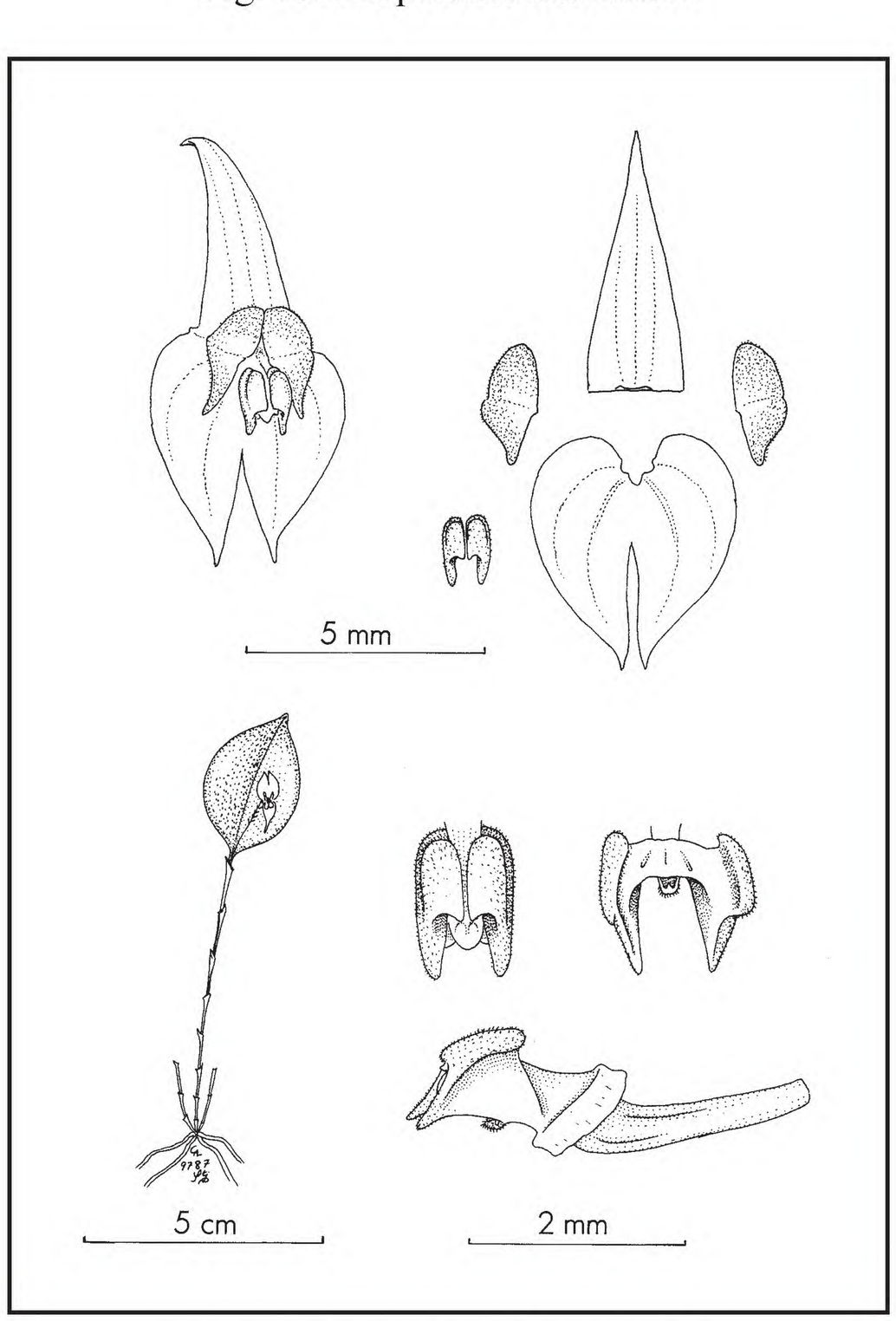



Fig. 134. Lepanthes helicocephala

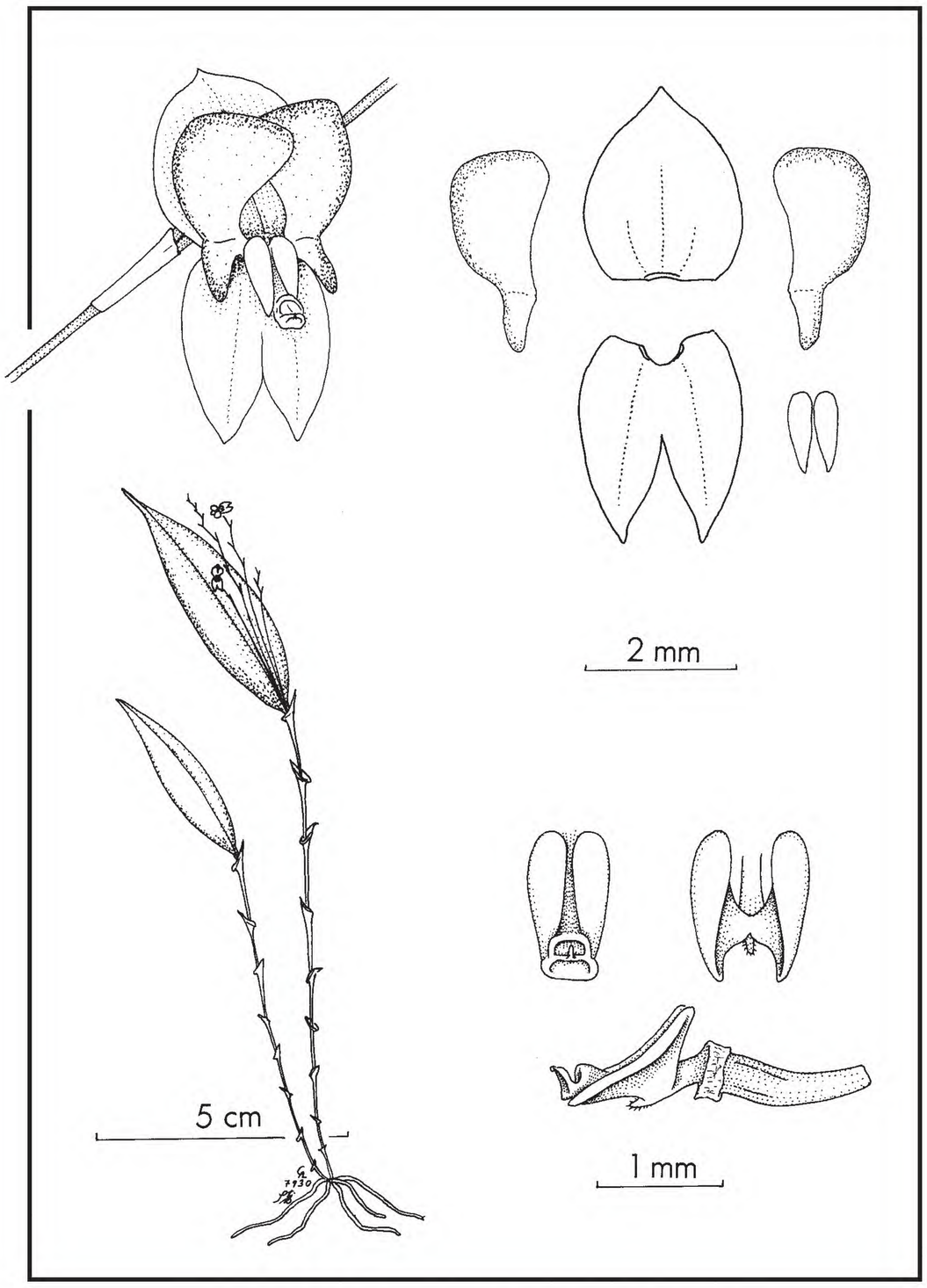



Fig. 135. Lepanthes hemirhoda

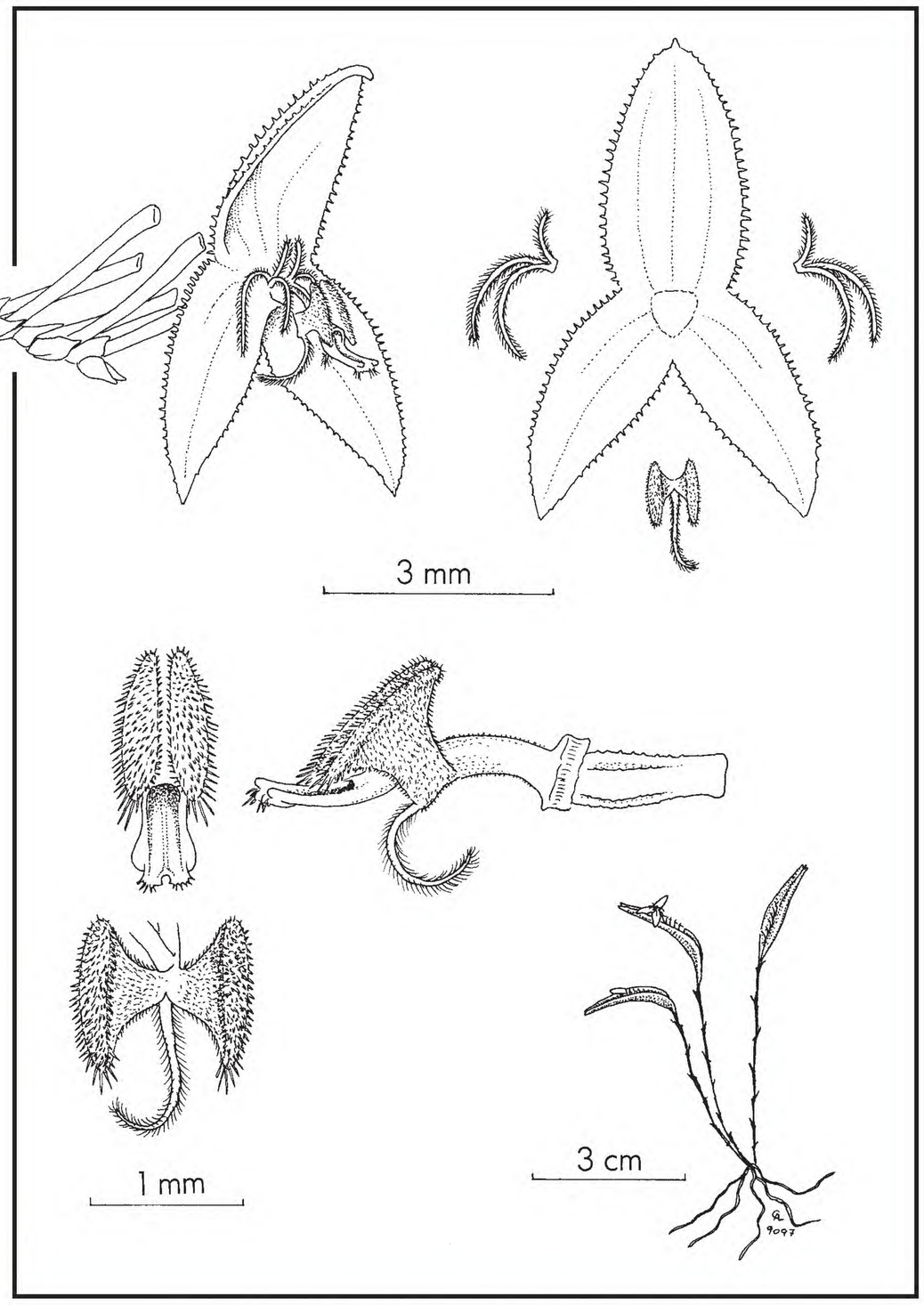



Fig. 136. Lepanthes heptapus

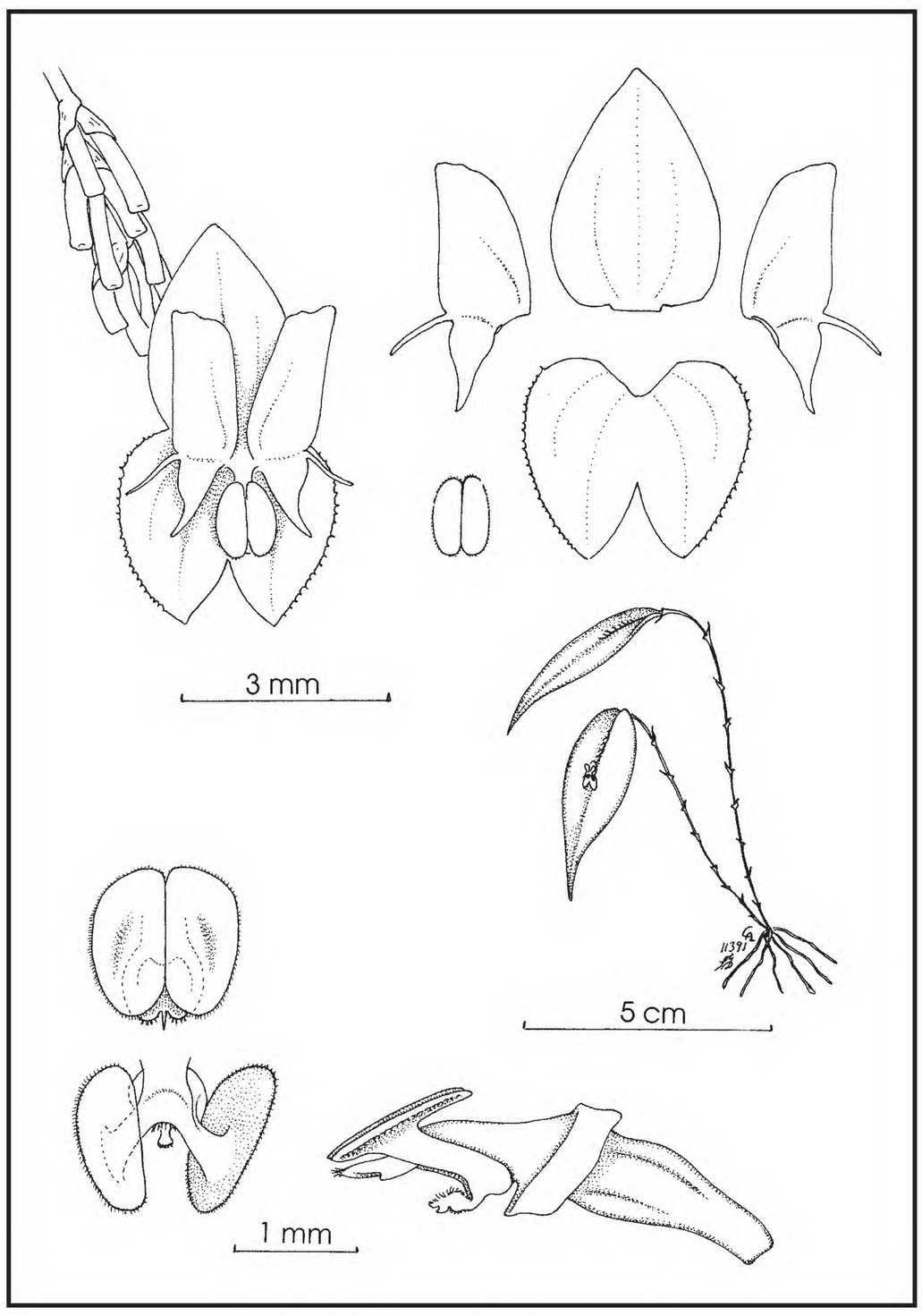



Fig. 137. Lepanthes heteroloba

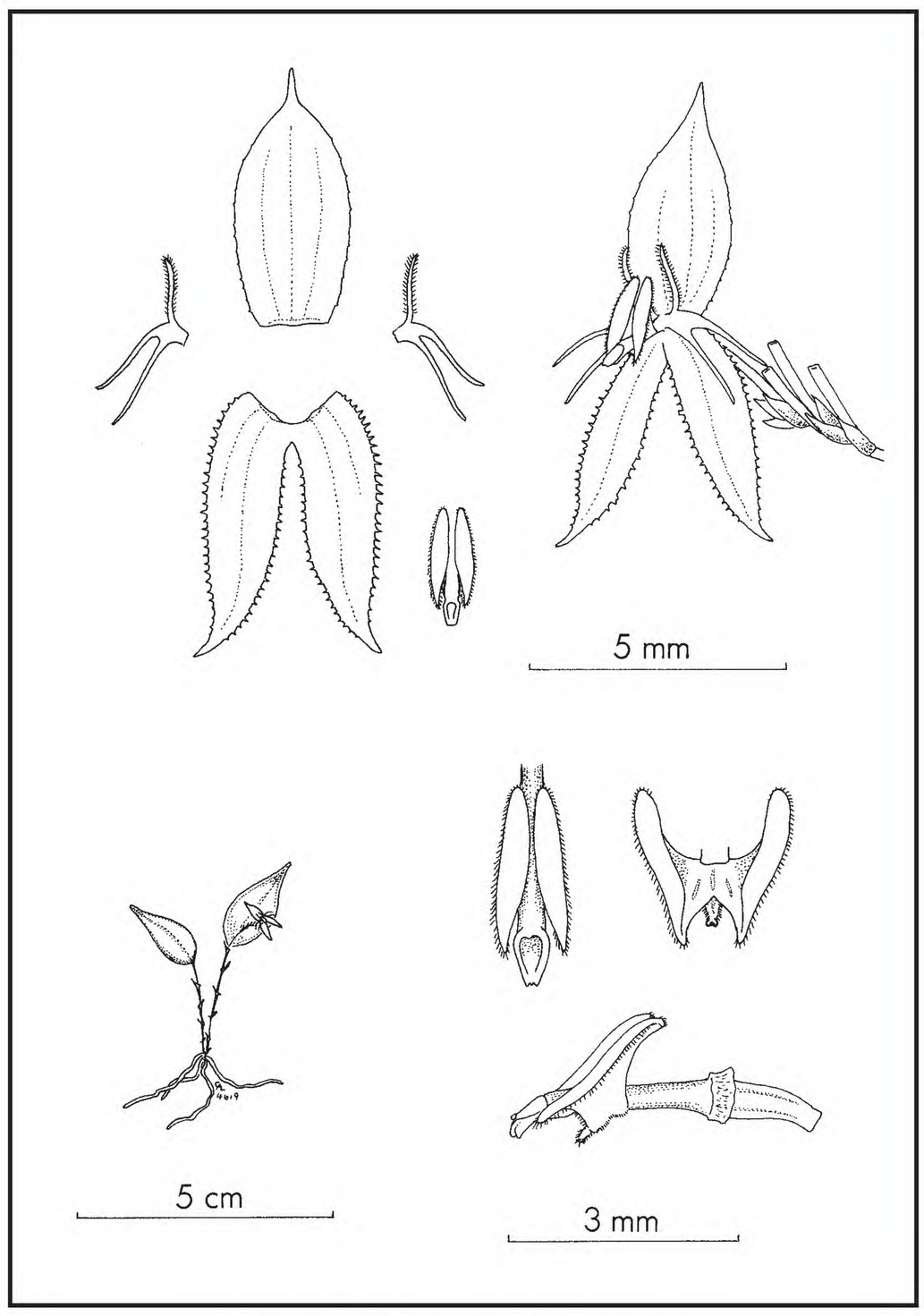



Fig. 138. Lepanthes hexapus

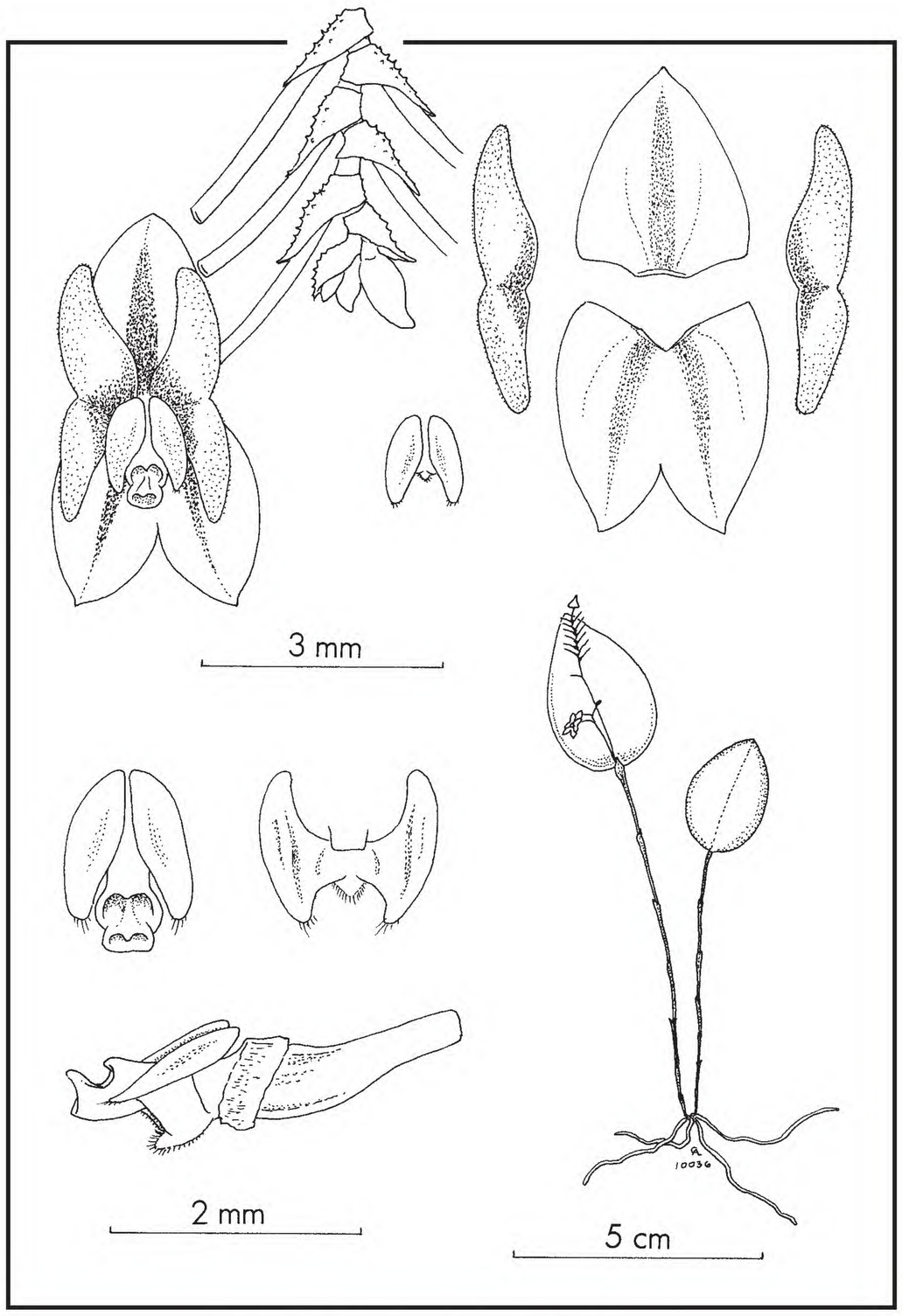



Fig. 139. Lepanthes hirpex

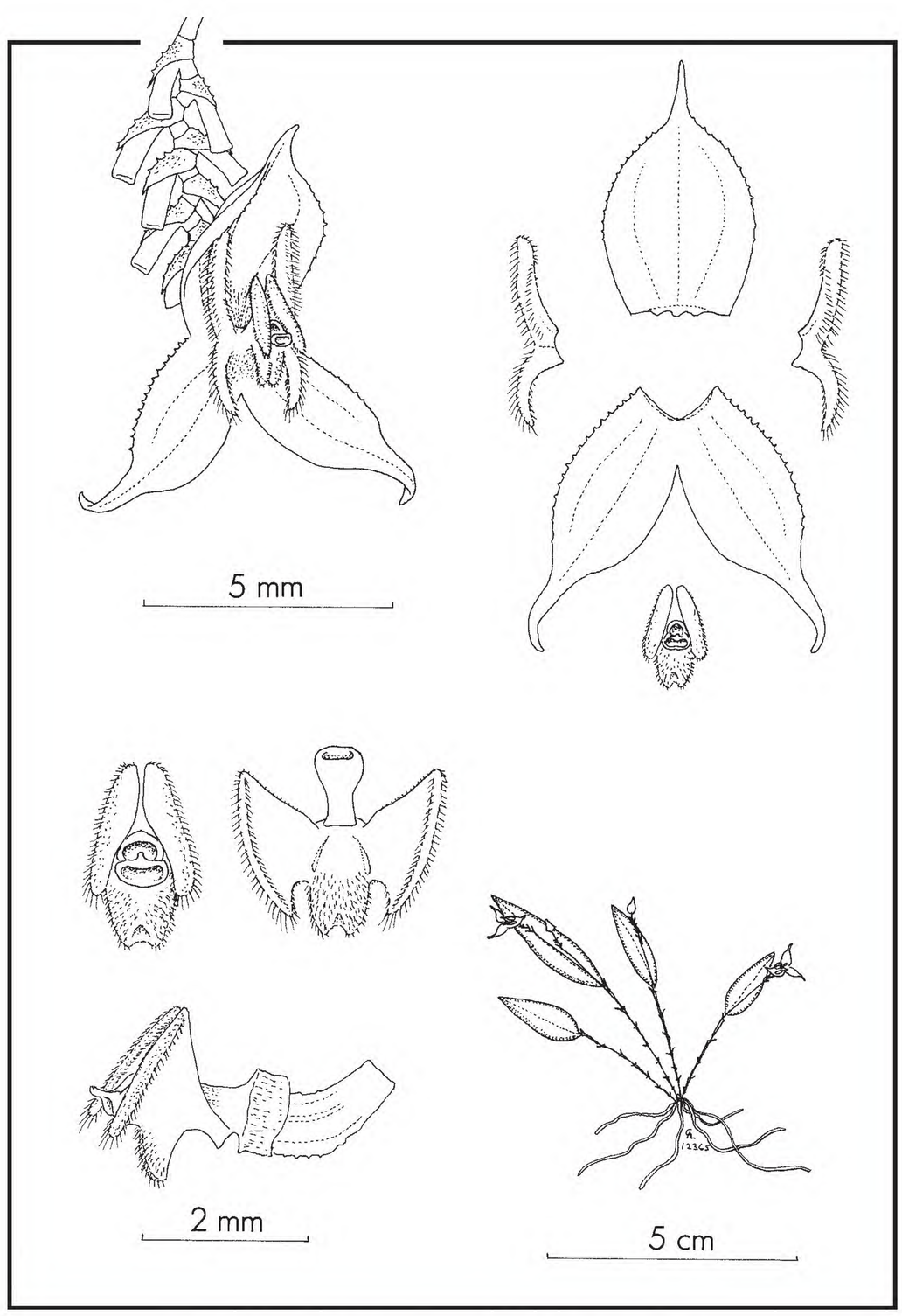



Fig. 140. Lepanthes hirsutula

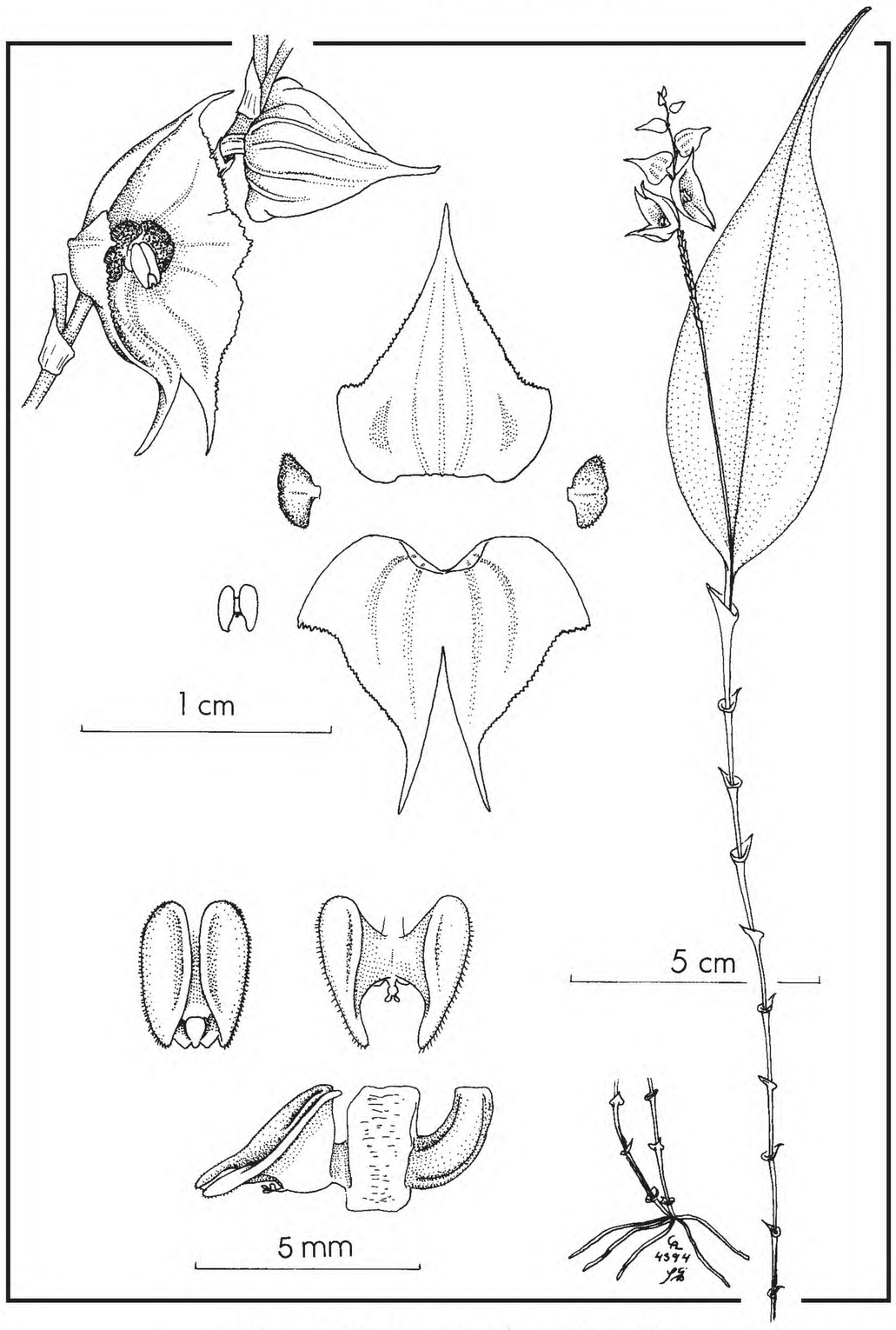



Fig. 141. Lepanthes hirtzii

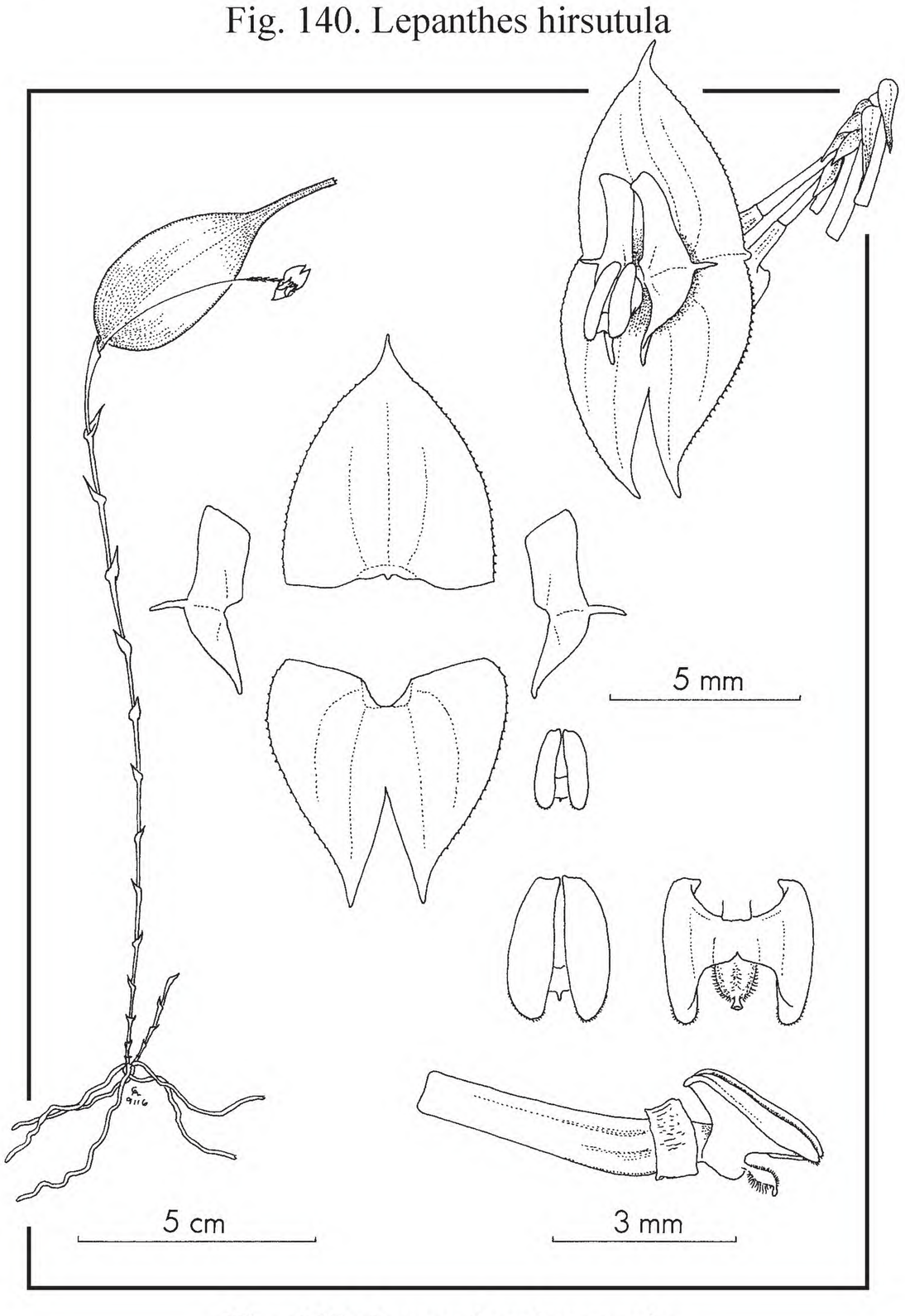



Fig. 142. Lepanthes hortensis

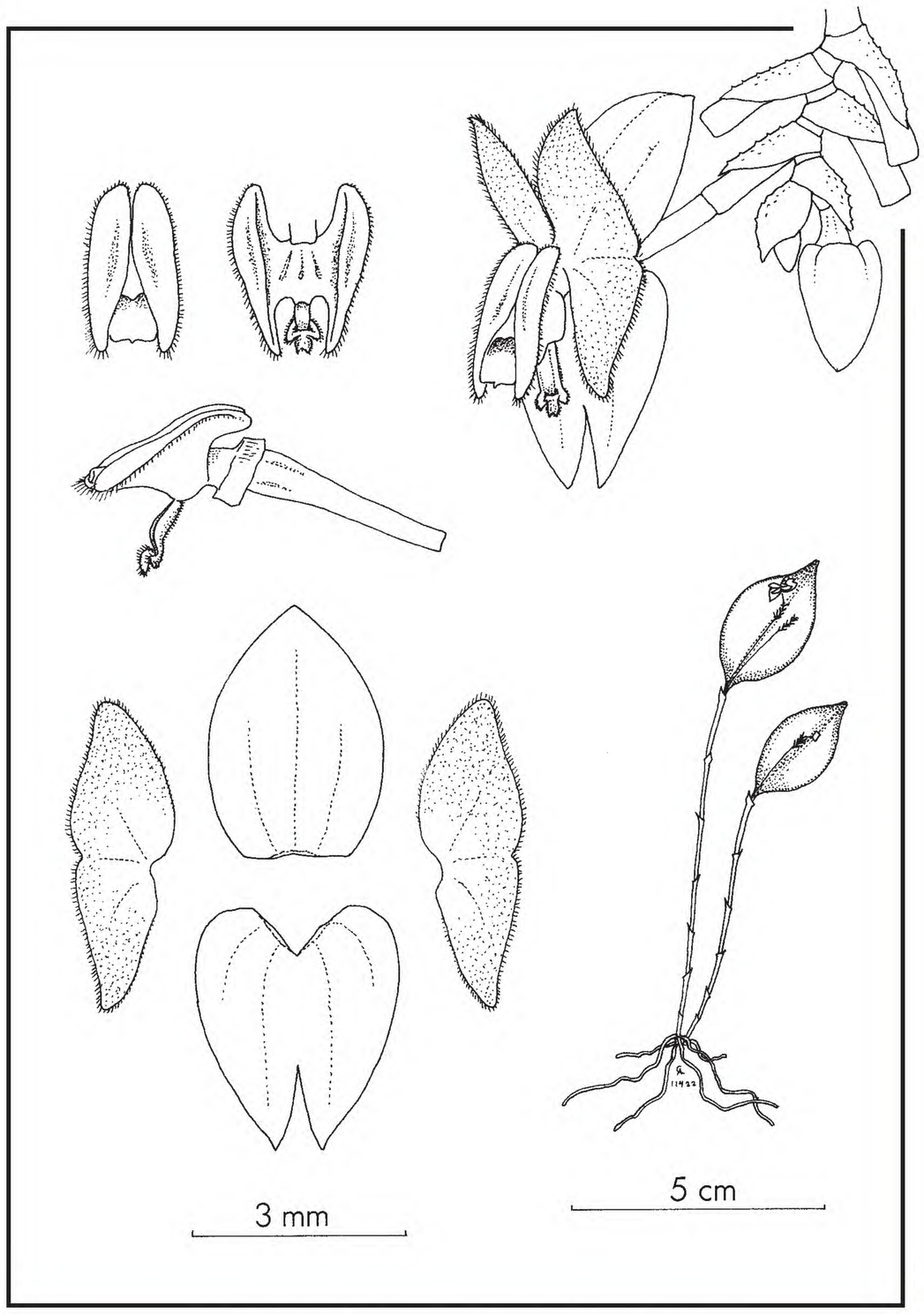



Fig. 143. Lepanthes hubeinii

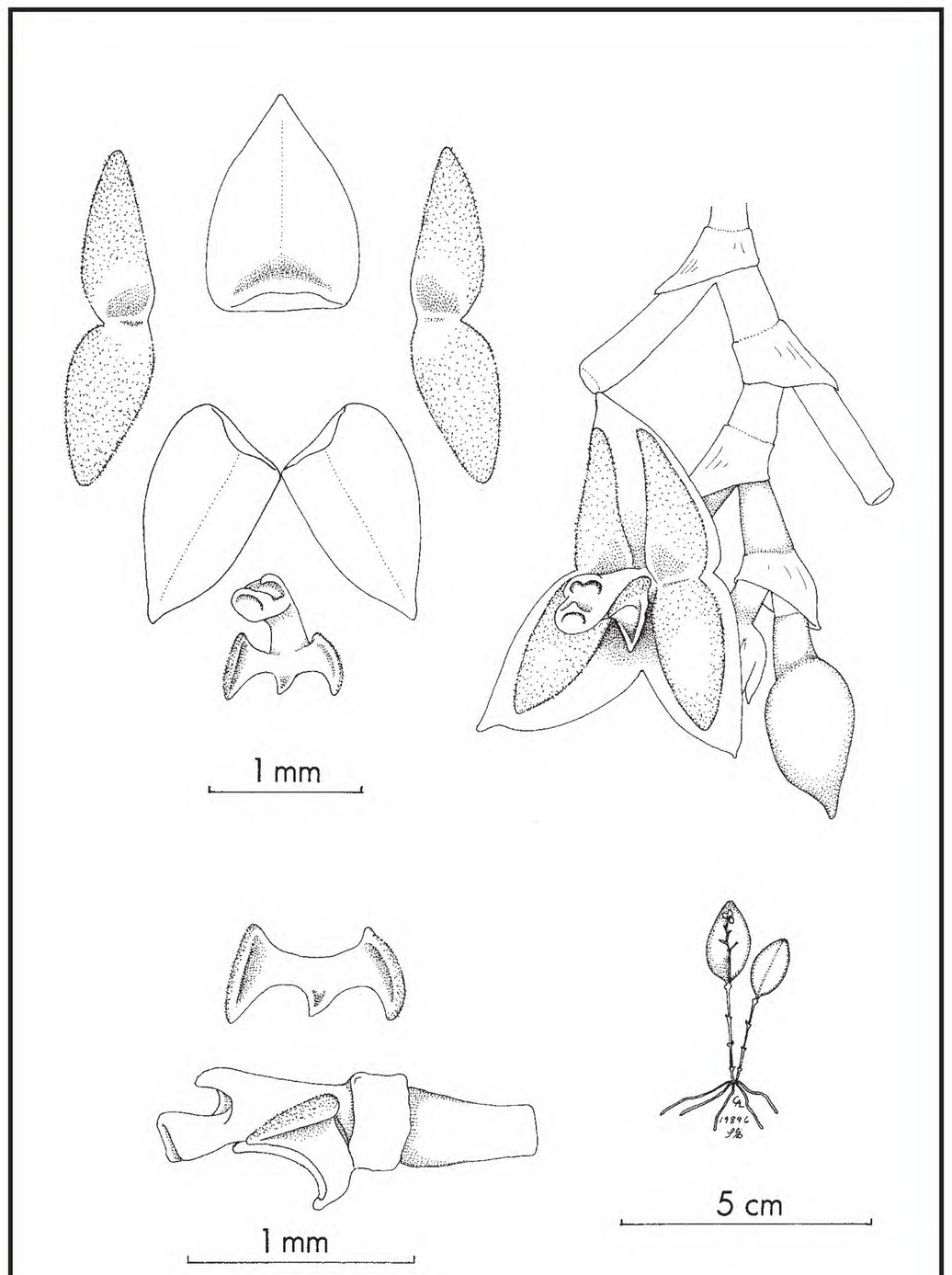



Fig. 144. Lepanthes hurgo

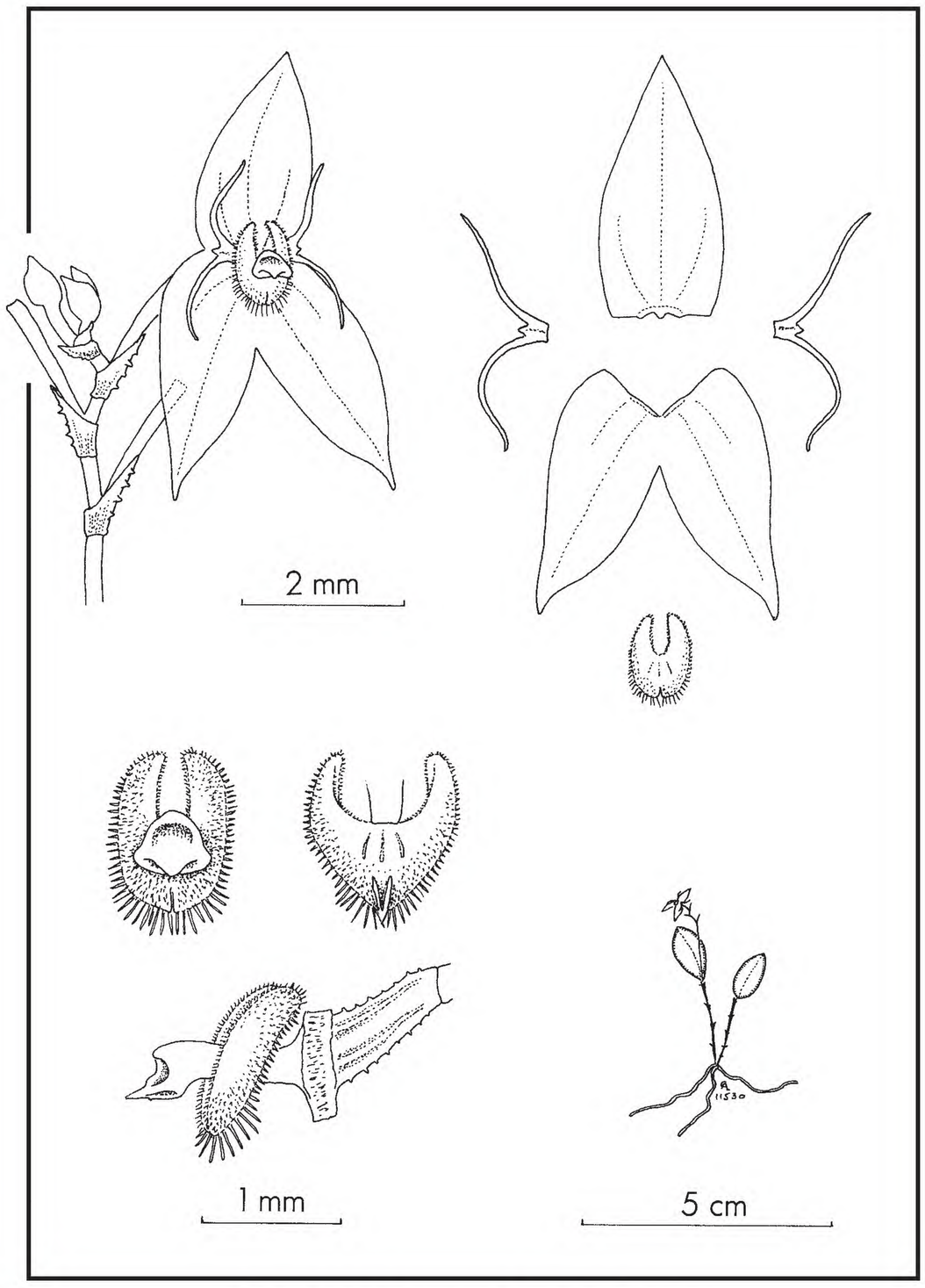



Fig. 145. Lepanthes hyphosa

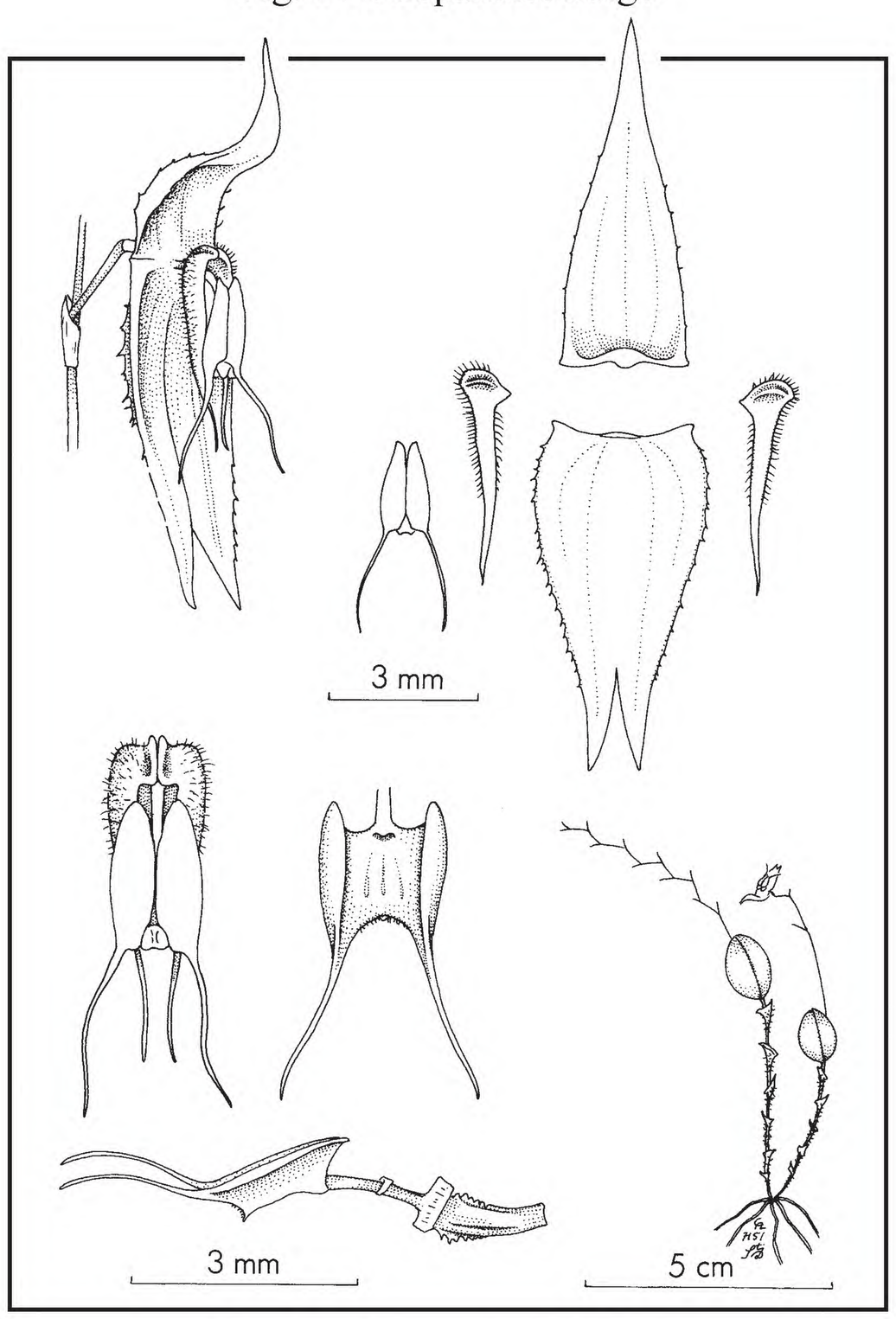



Fig. 146. Lepanthes ictalurus

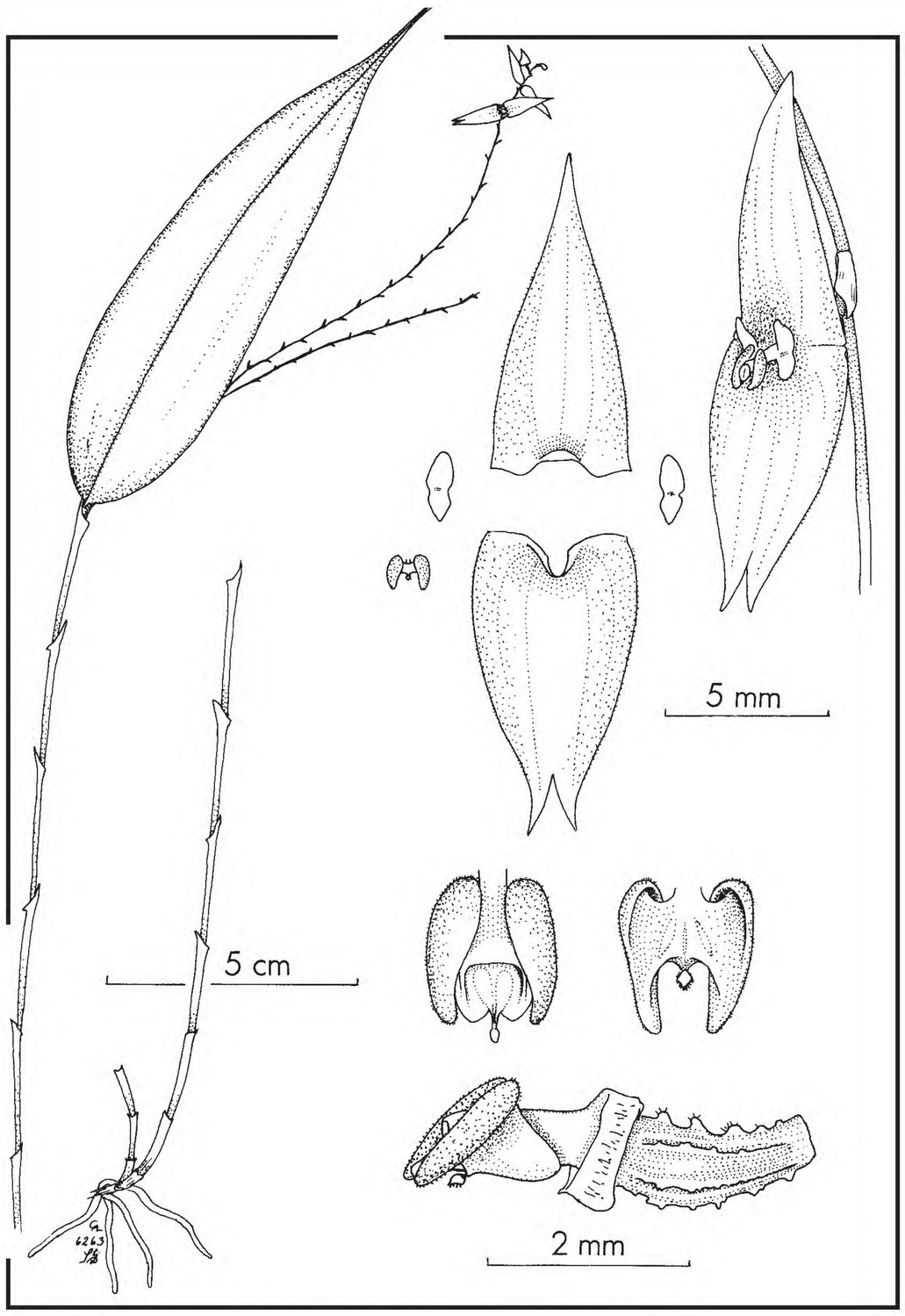



Fig. 147. Lepanthes illex

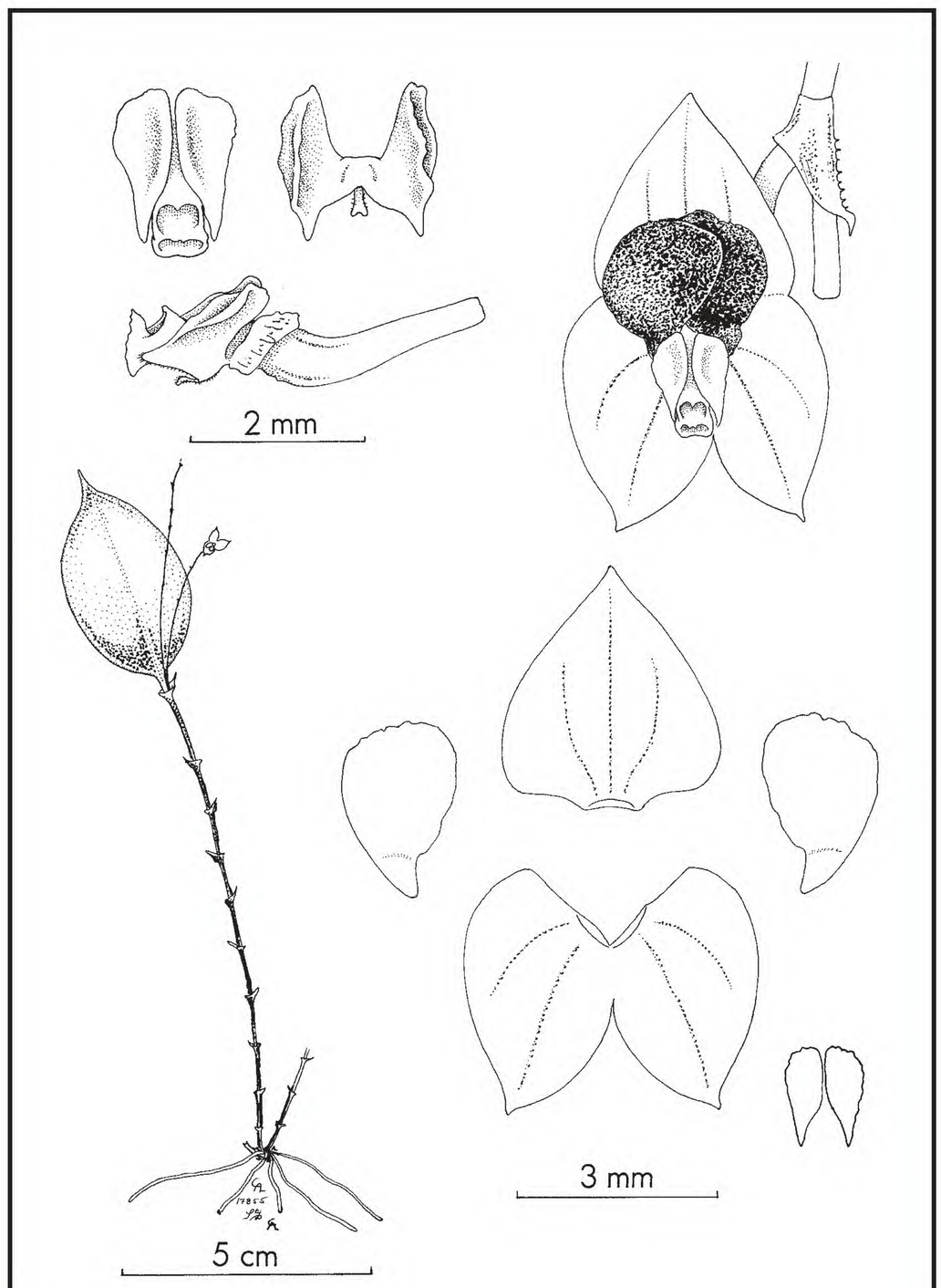



Fig. 148. Lepanthes imbricans




Fig. 149. Lepanthes imposita

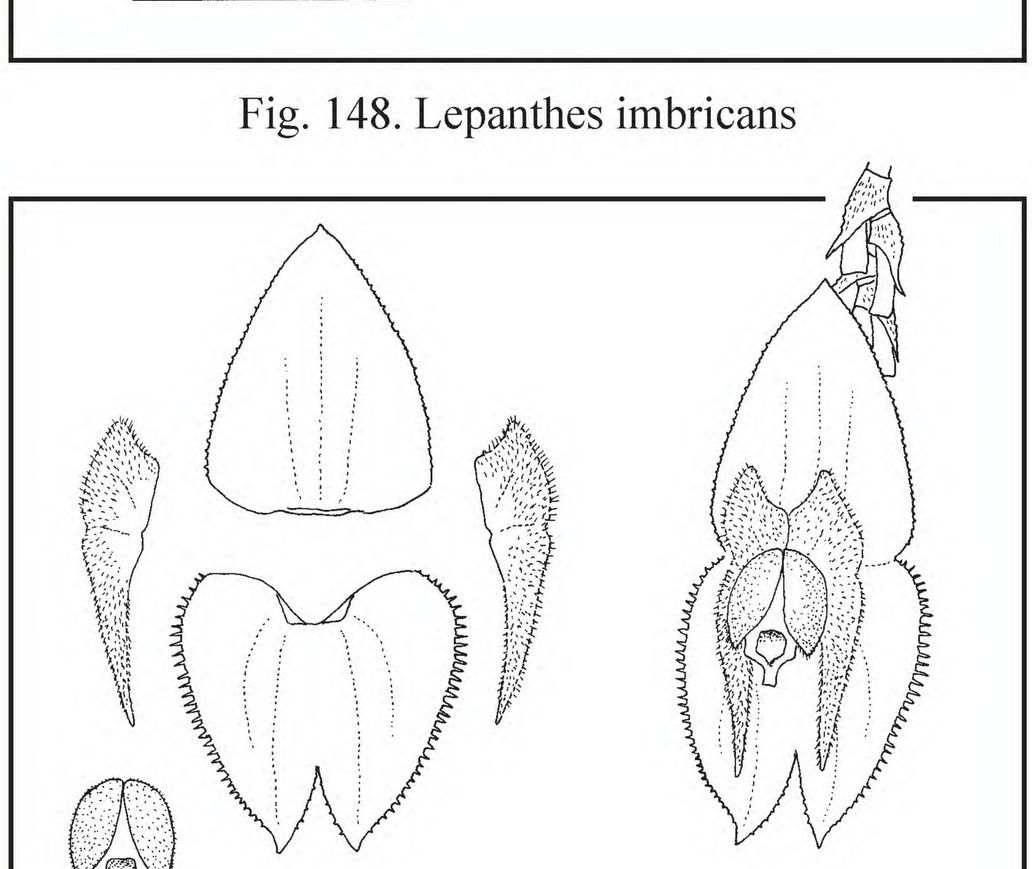



Fig. 150. Lepanthes impotens

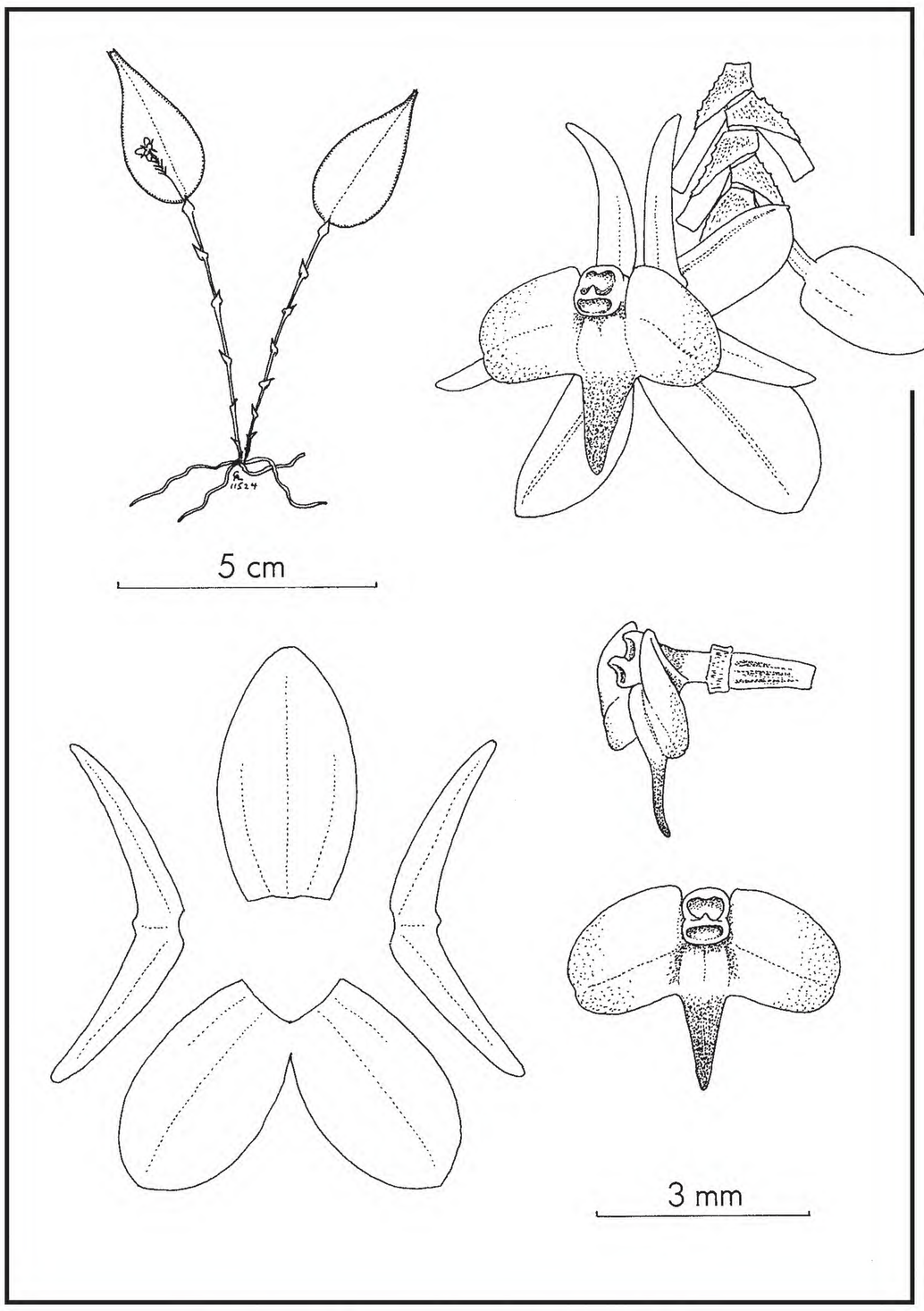



Fig. 151. Lepanthes insolita

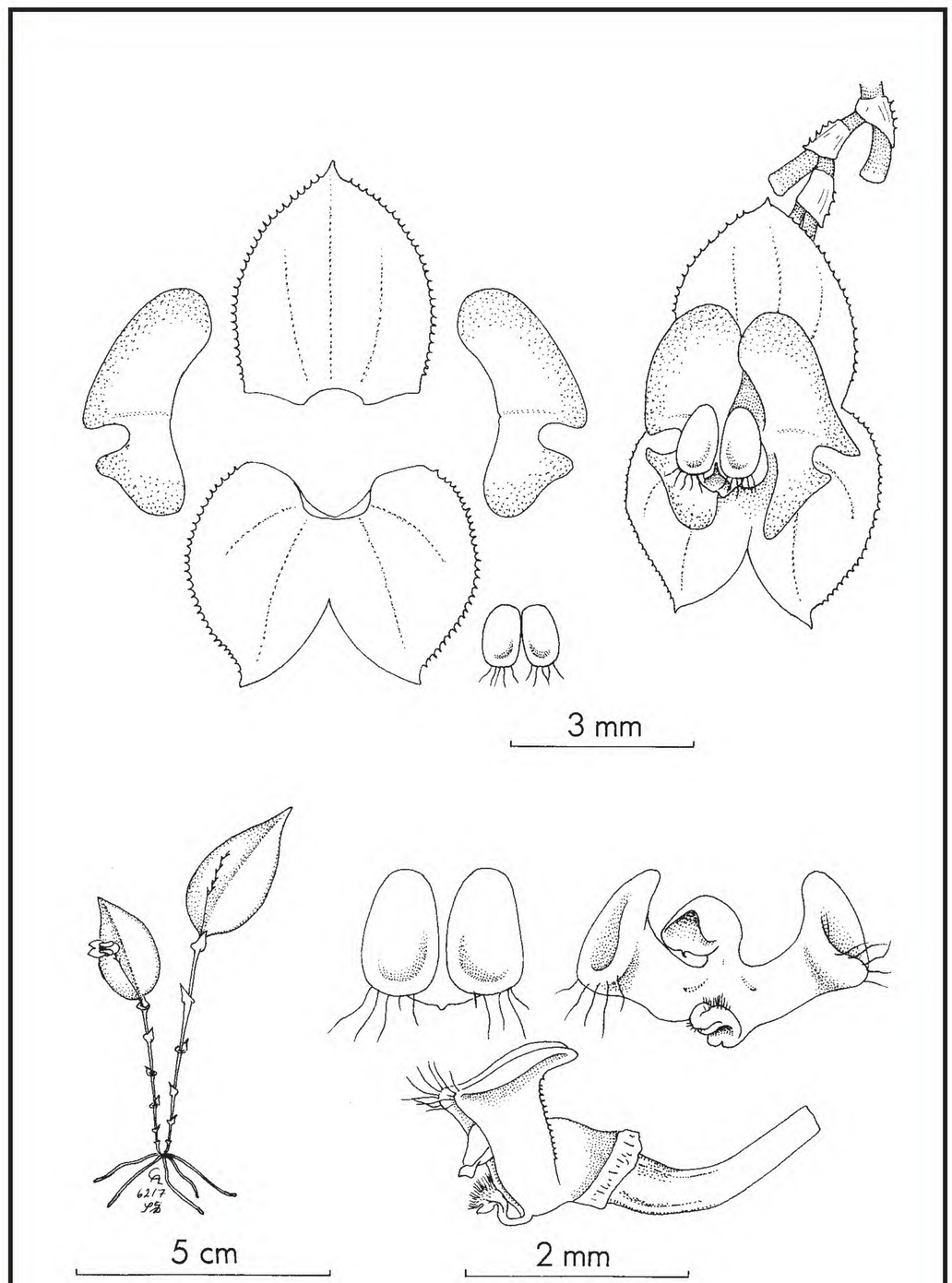



Fig. 152. Lepanthes intonsa

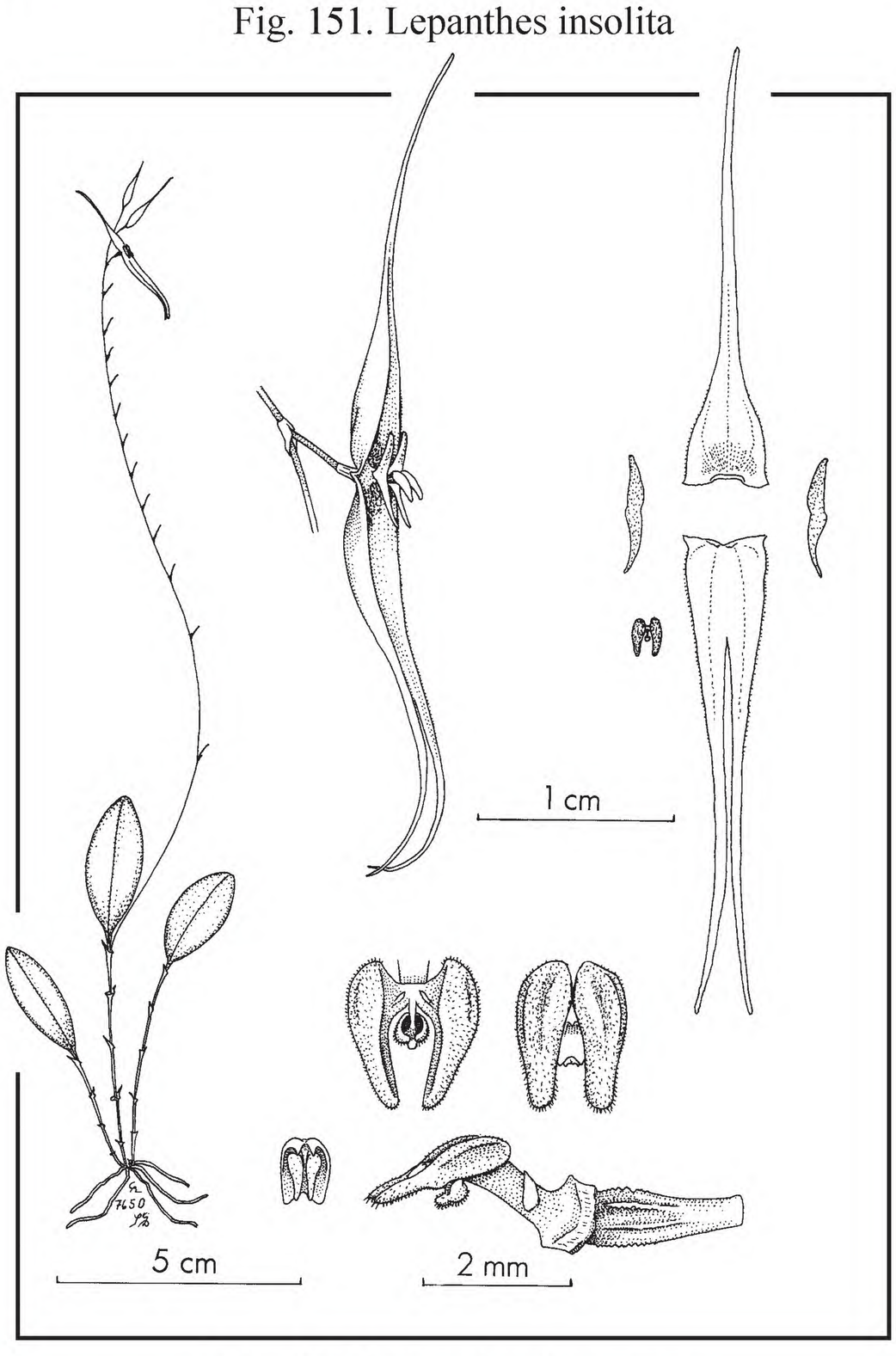



Fig. 153. Lepanthes ionoptera

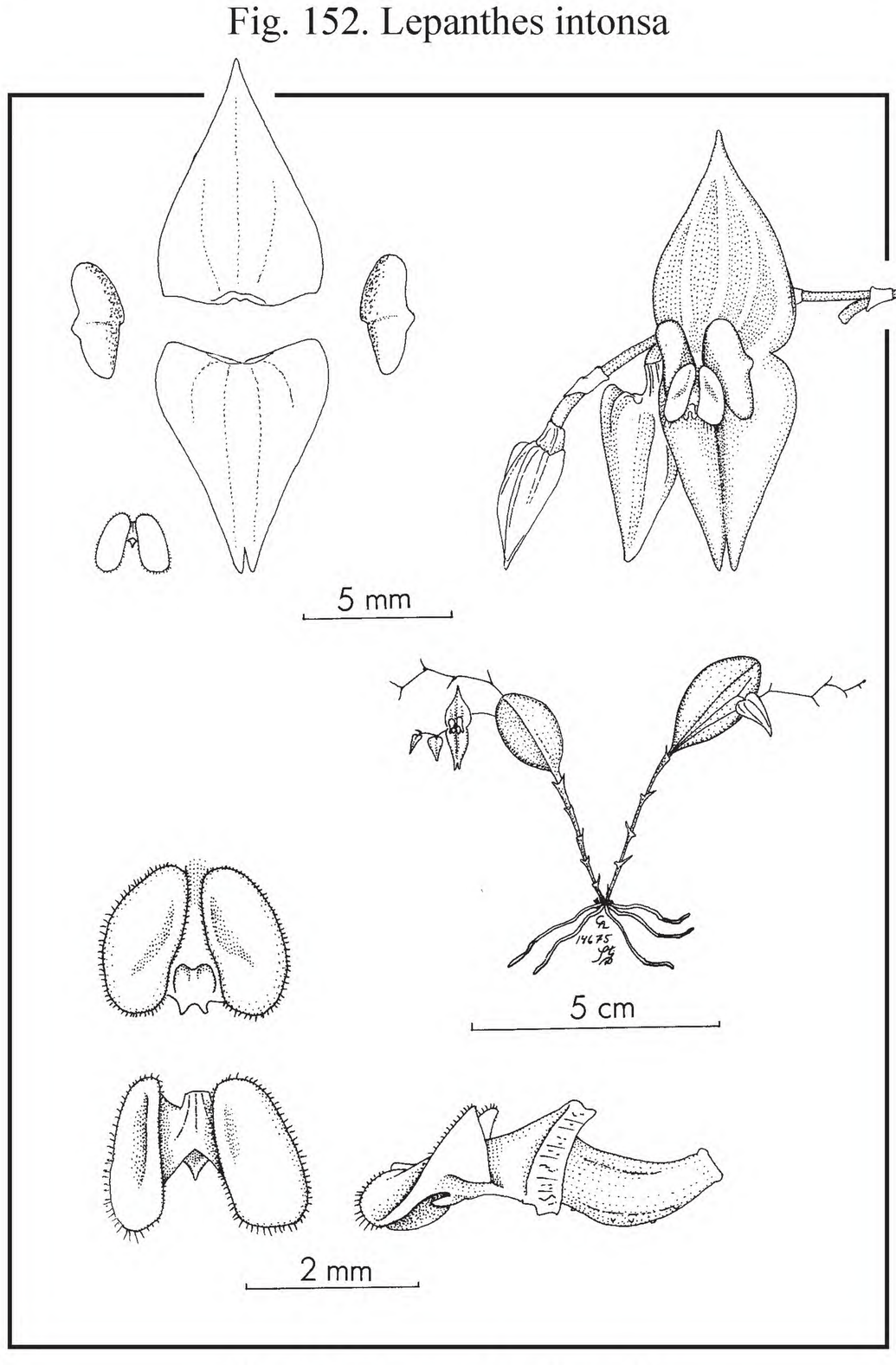



Fig. 154. Lepanthes isochila

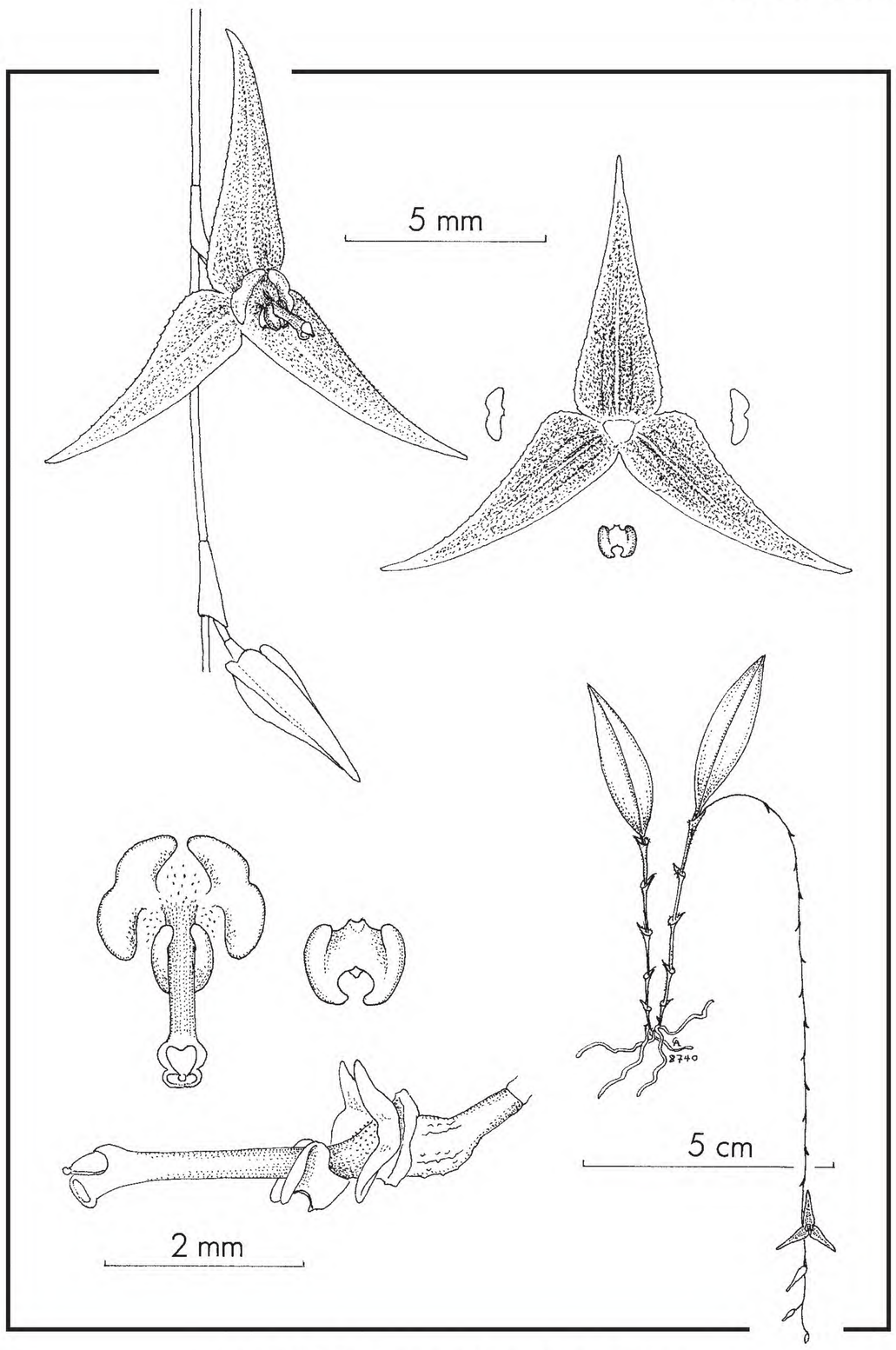



Fig. 155. Lepanthes isosceles

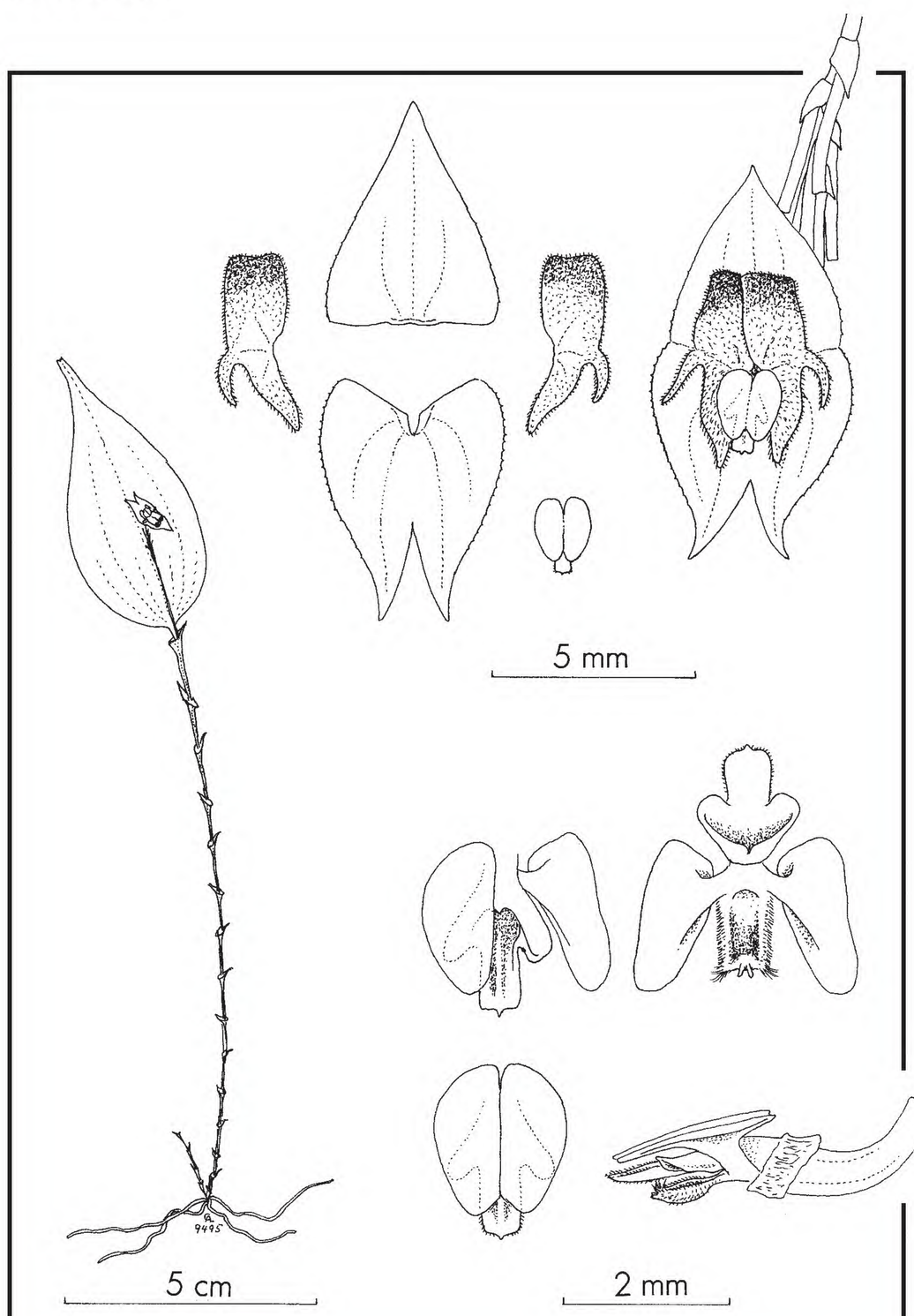



Fig. 156. Lepanthes janitor

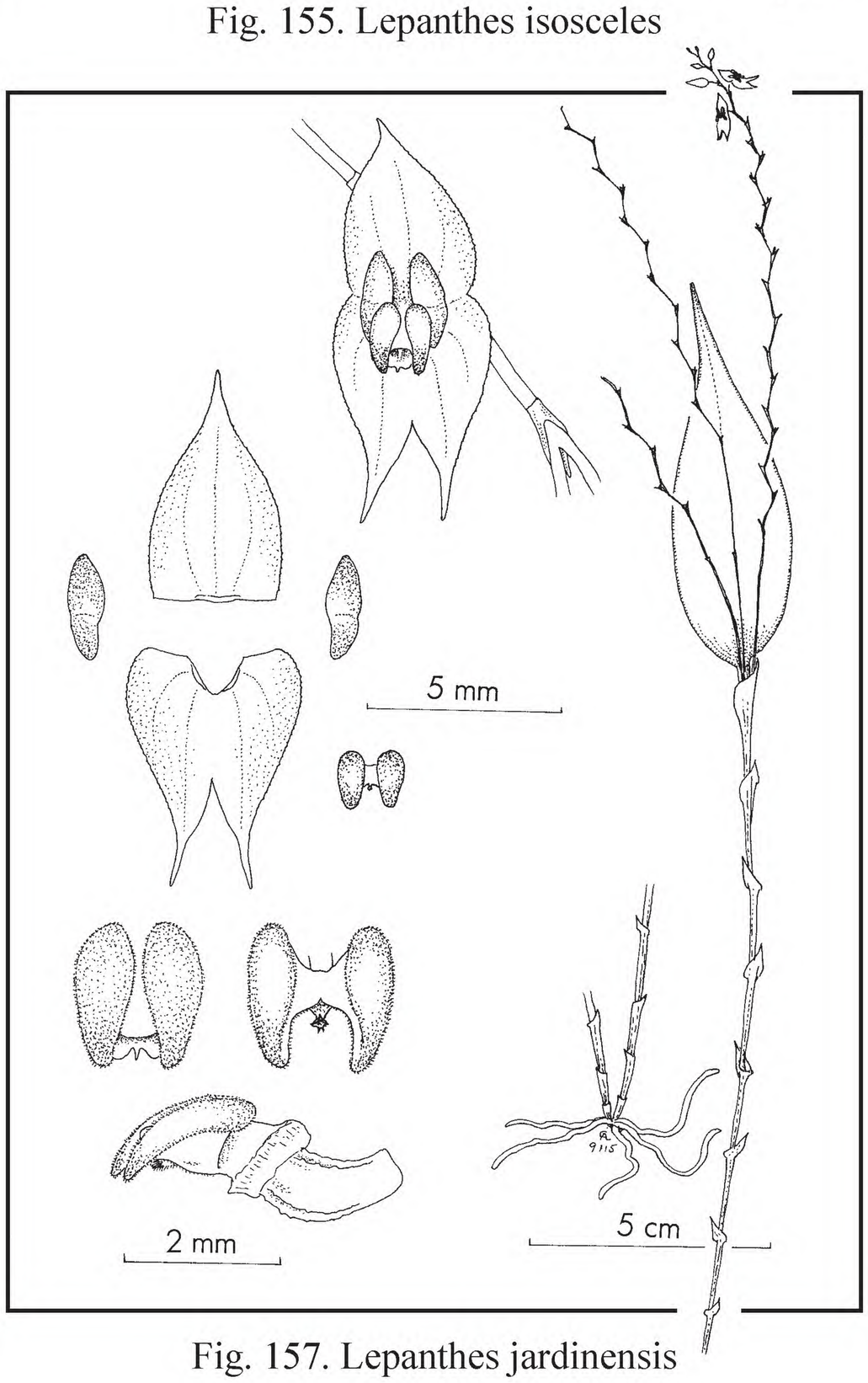



Fig. 157. Lepanthes jardinensis

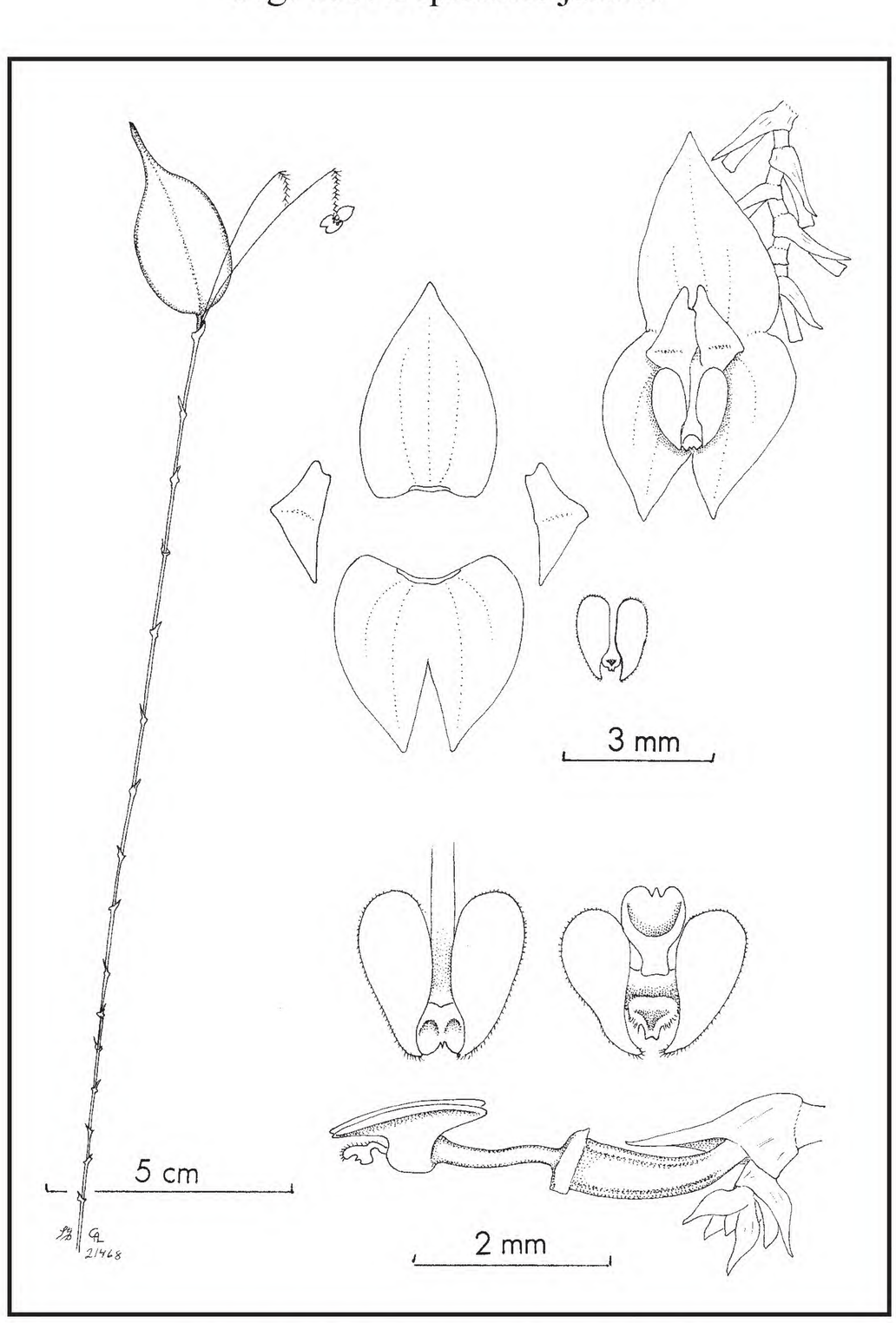



Fig. 158. Lepanthes juan-felipei

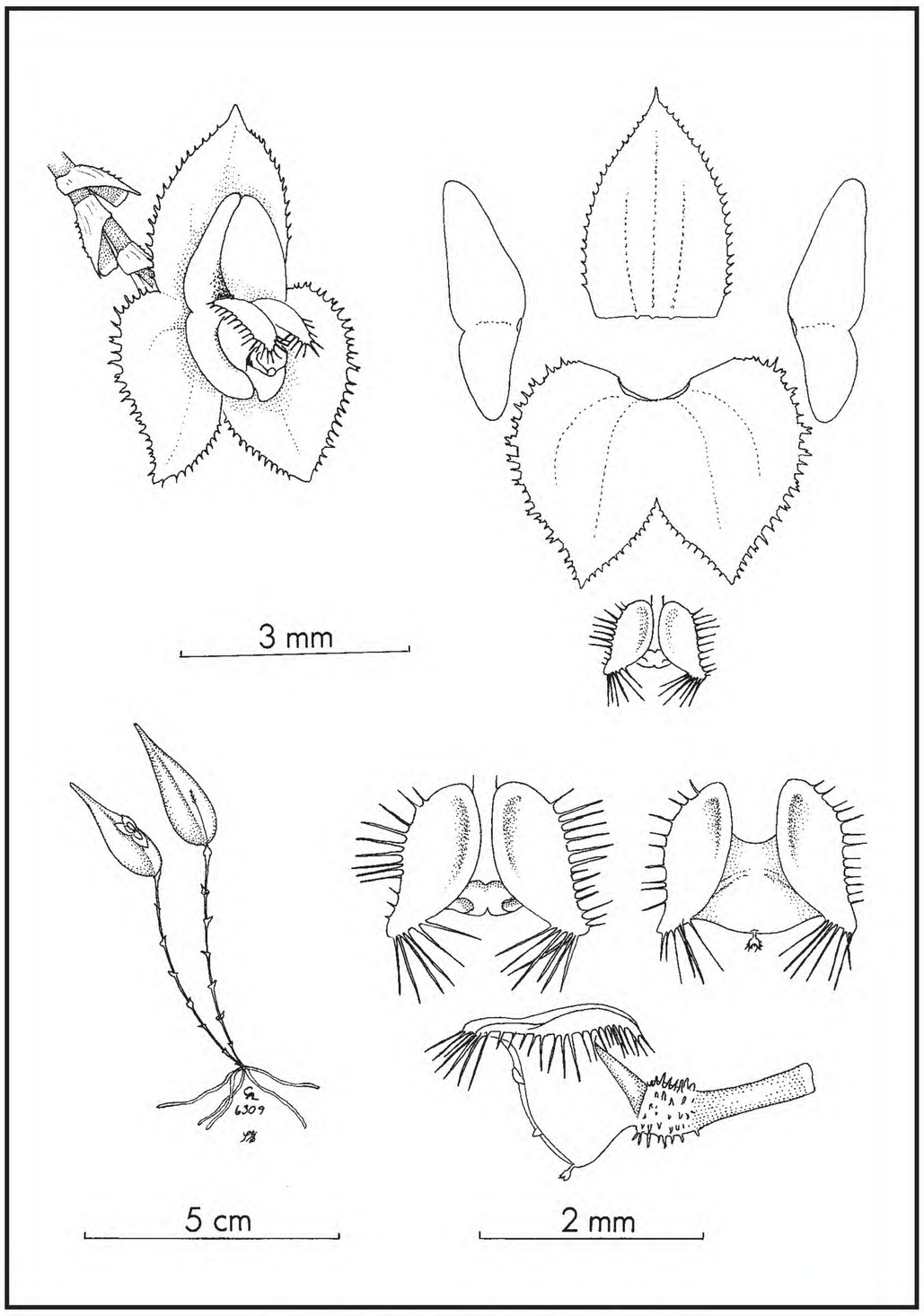



Fig. 159. Lepanthes jubata

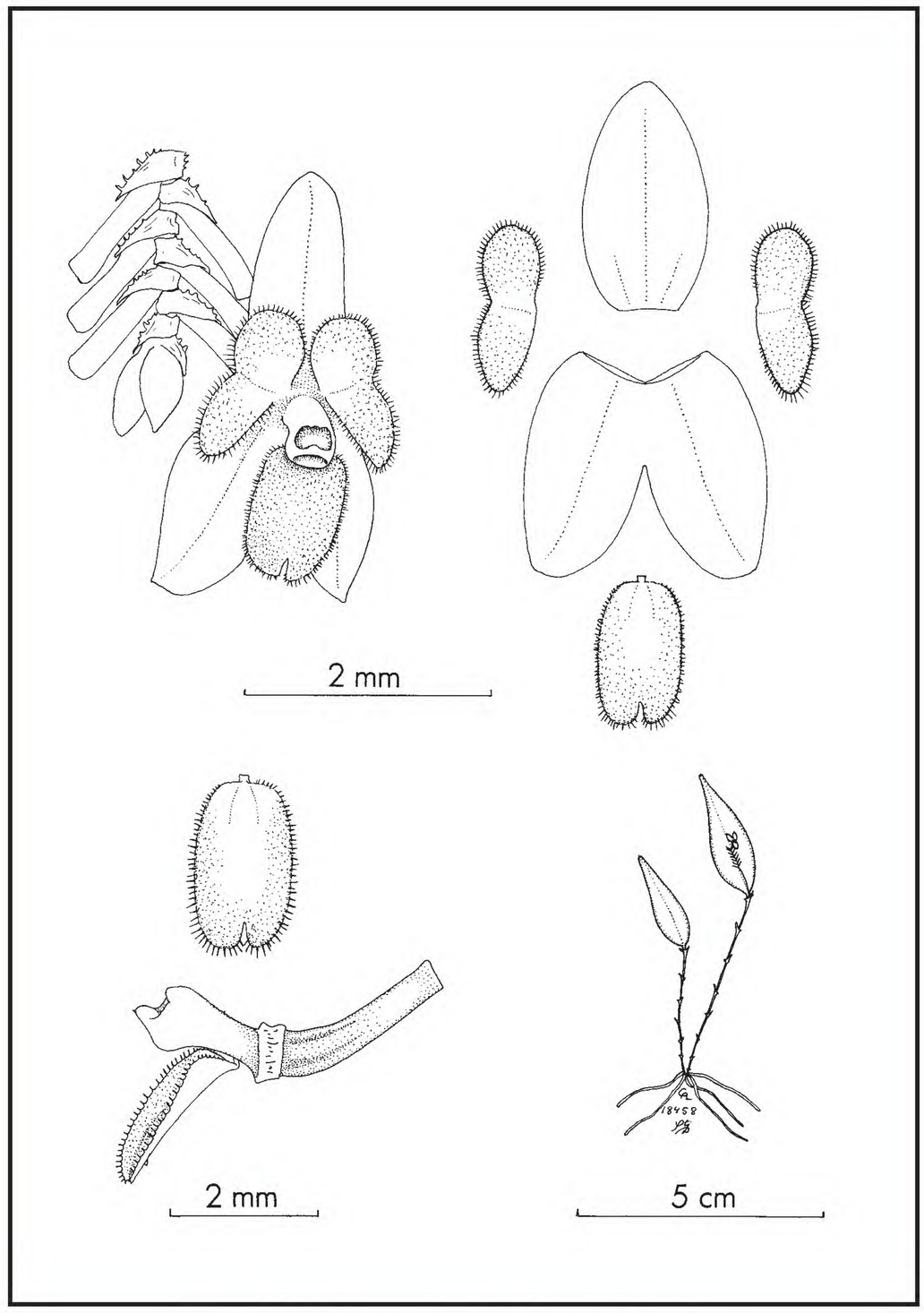



Fig. 160. Lepanthes labiata

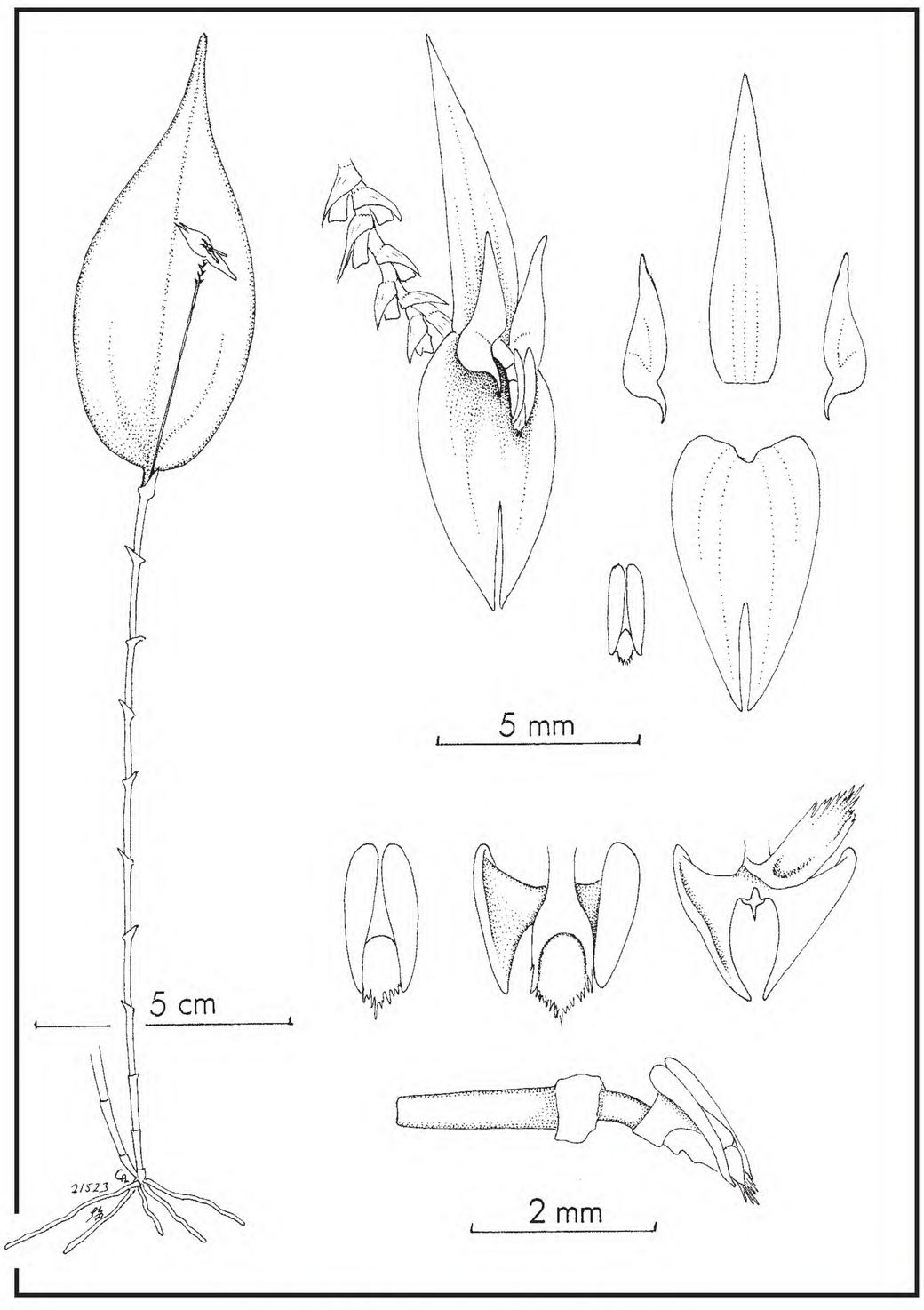



Fig. 161. Lepanthes lacera

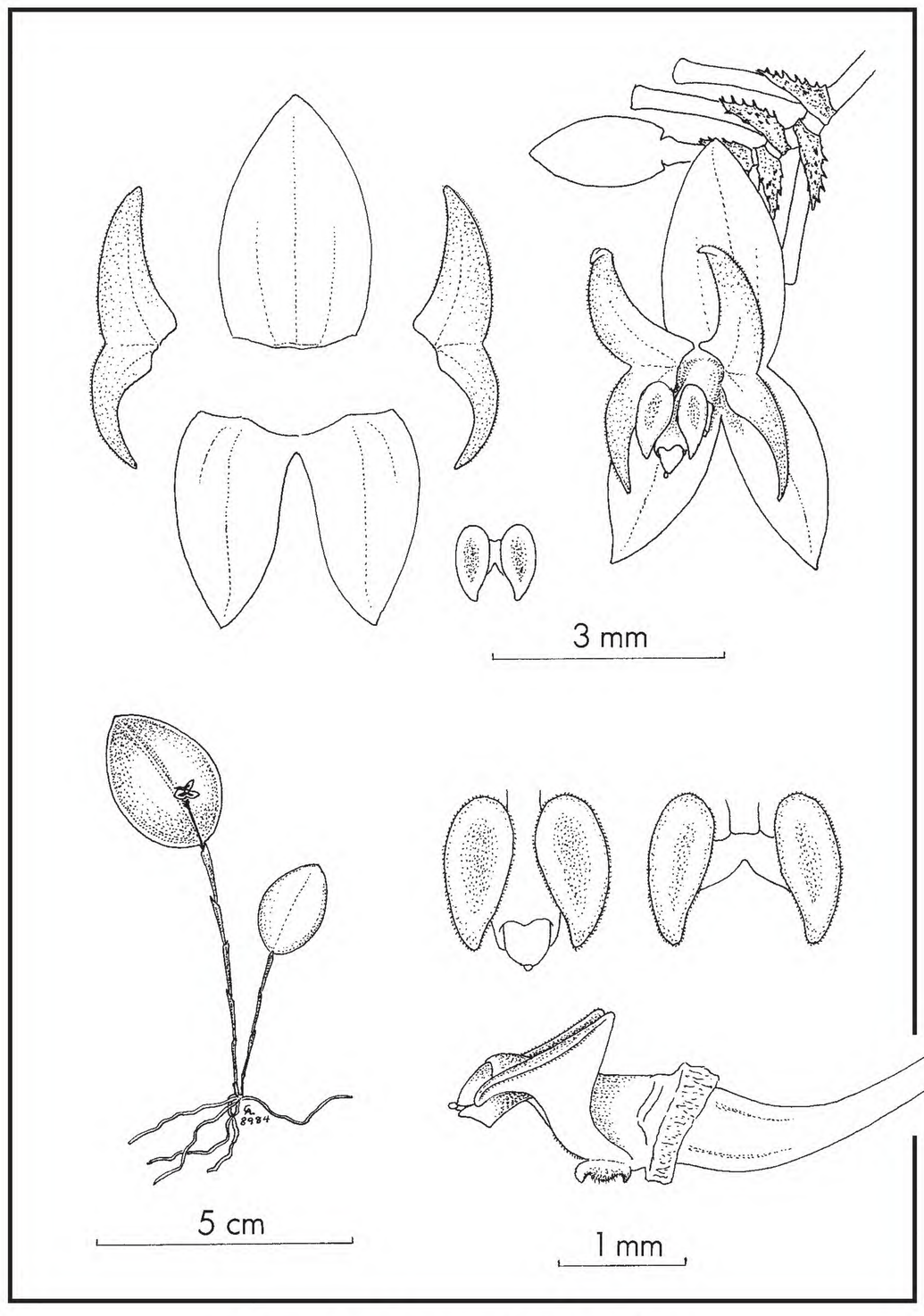



Fig. 162. Lepanthes larvina

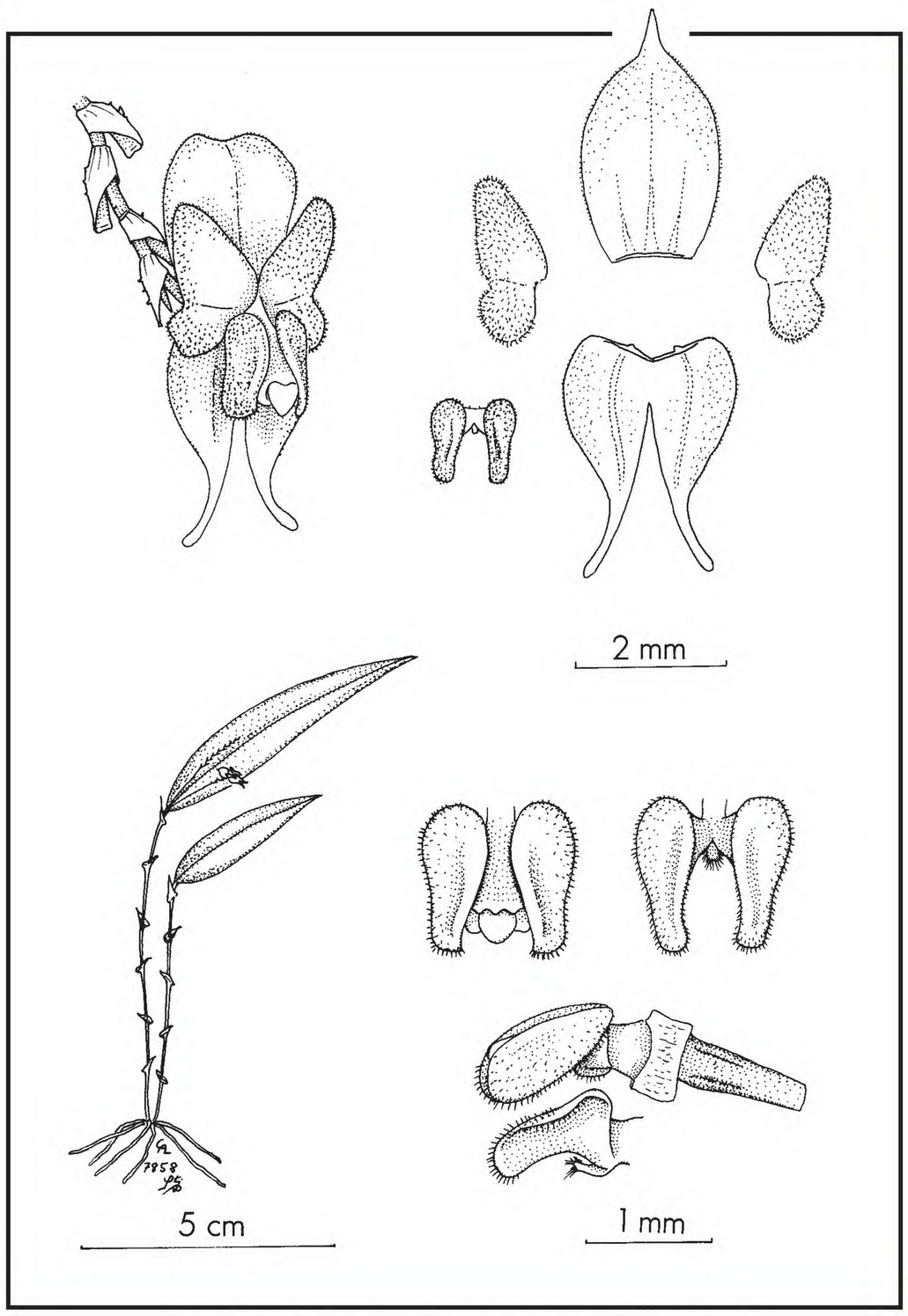



Fig. 163. Lepanthes lasiopetala

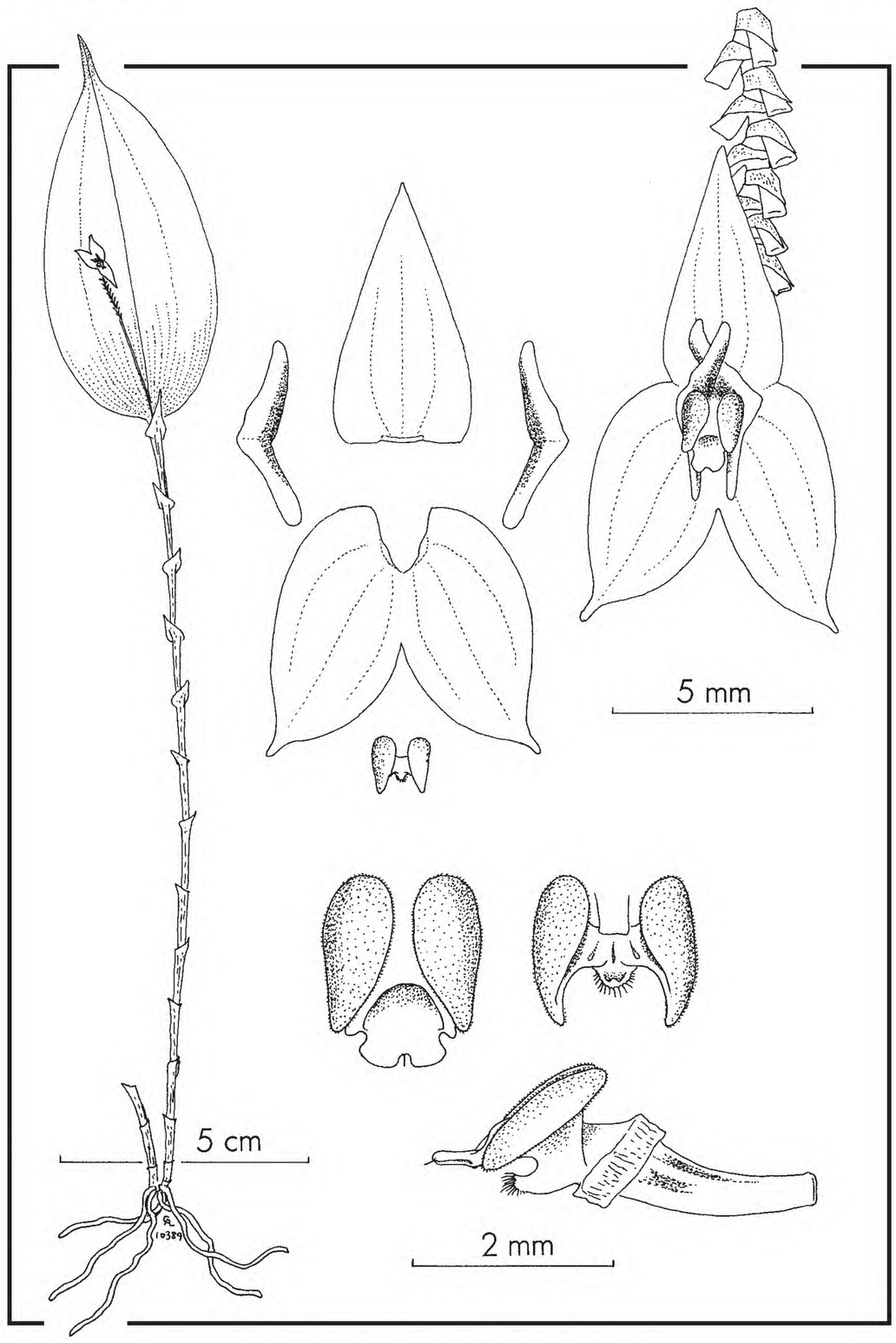



Fig. 164. Lepanthes ligiae

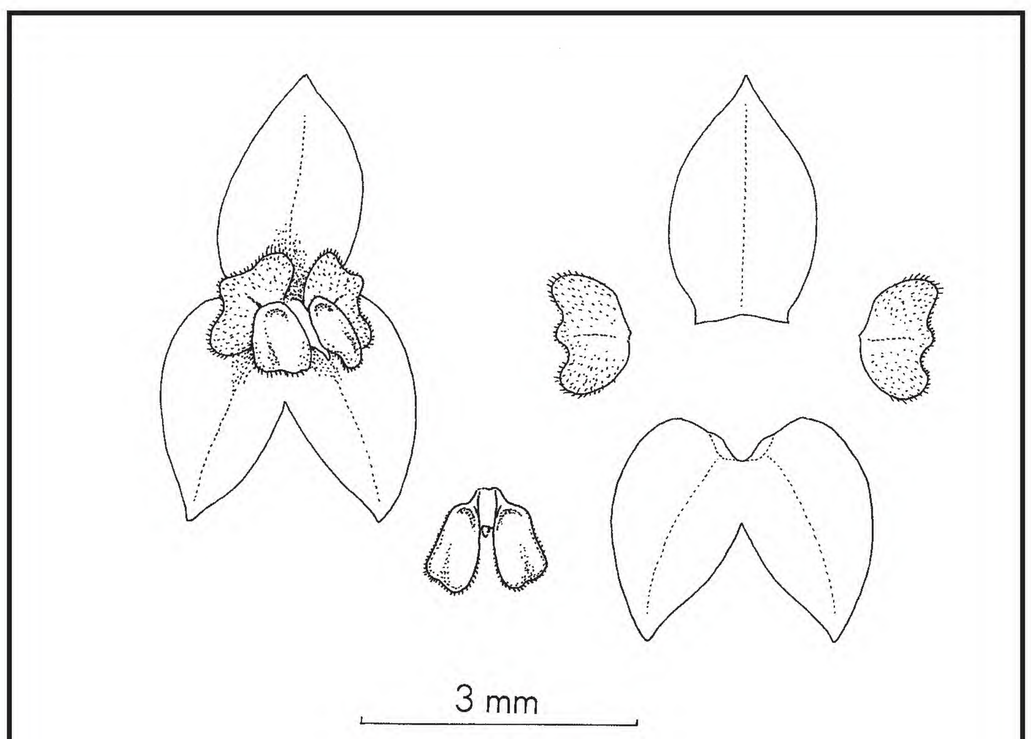



Fig. 165. Lepanthes lilliputae

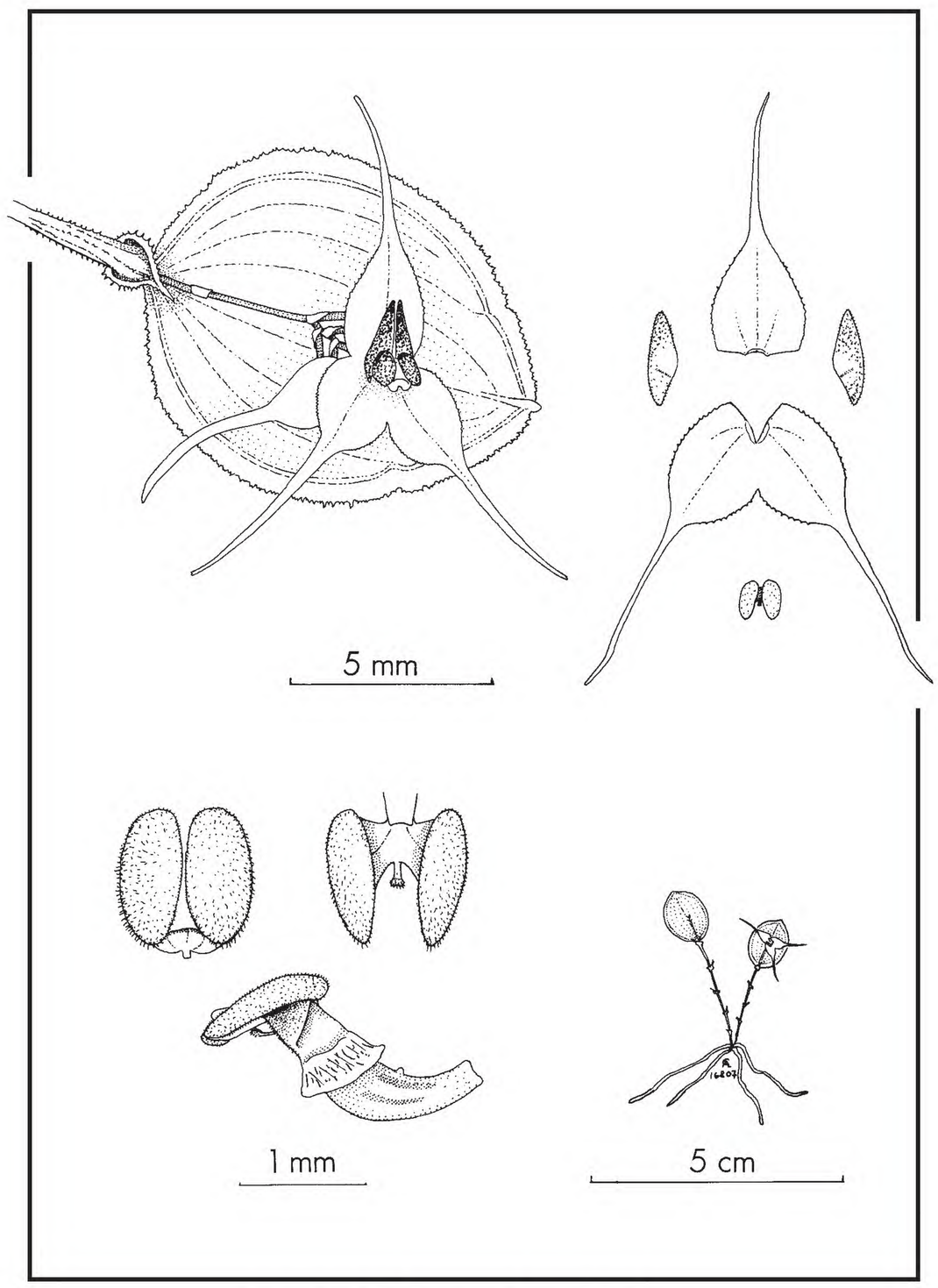



Fig. 166. Lepanthes limbata

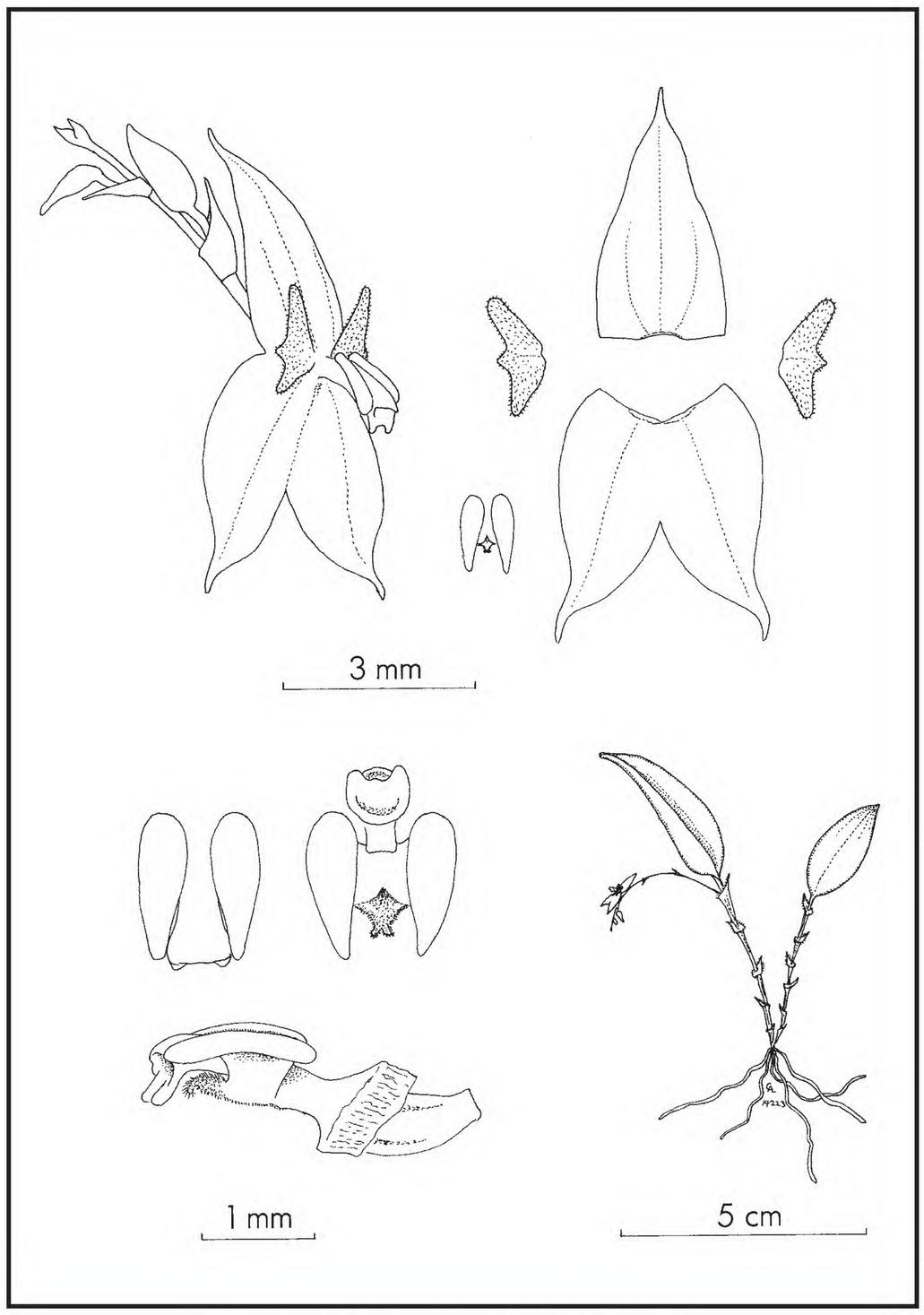



Fig. 167. Lepanthes linealis

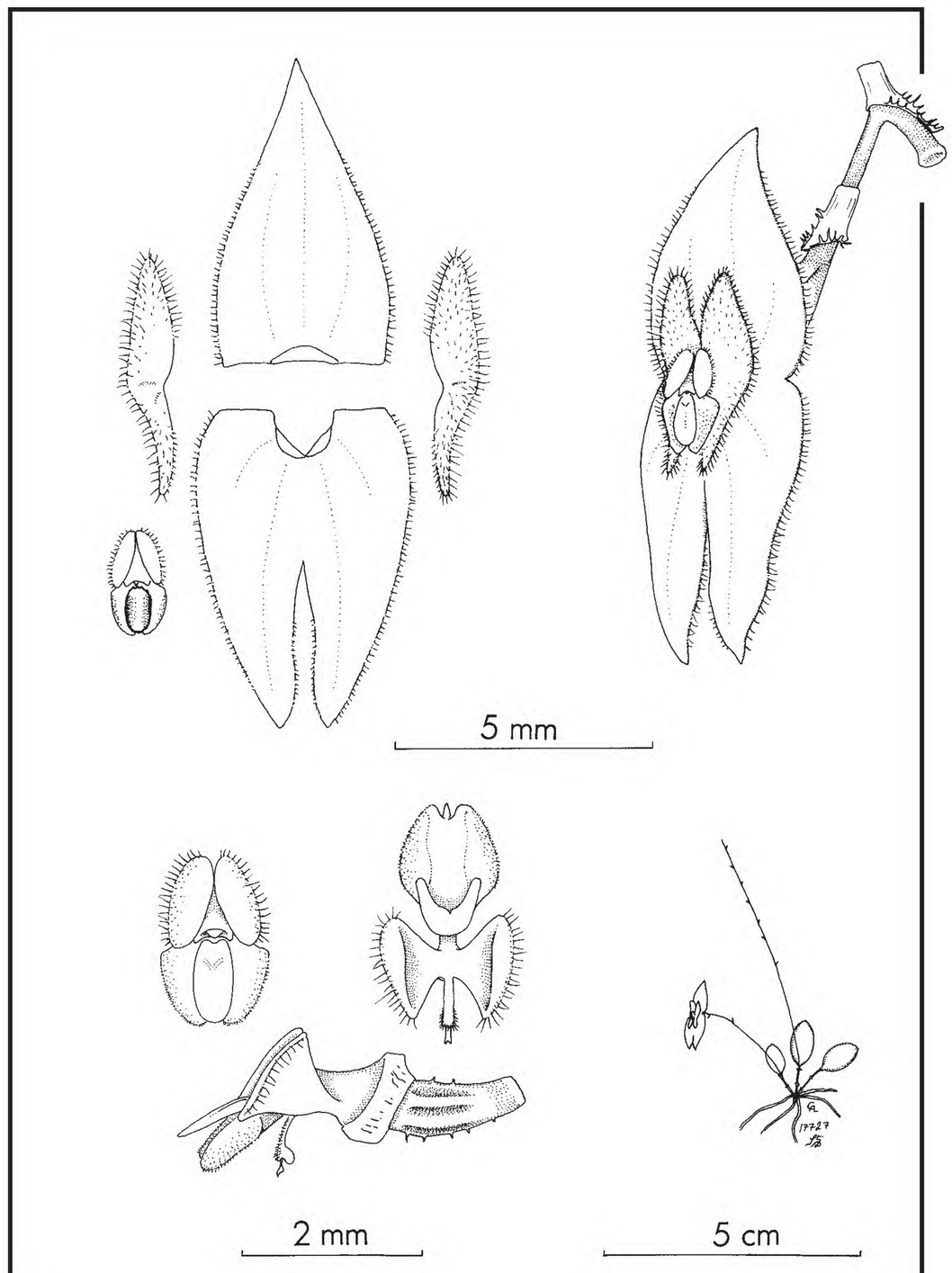



Fig. 168. Lepanthes lingulosa

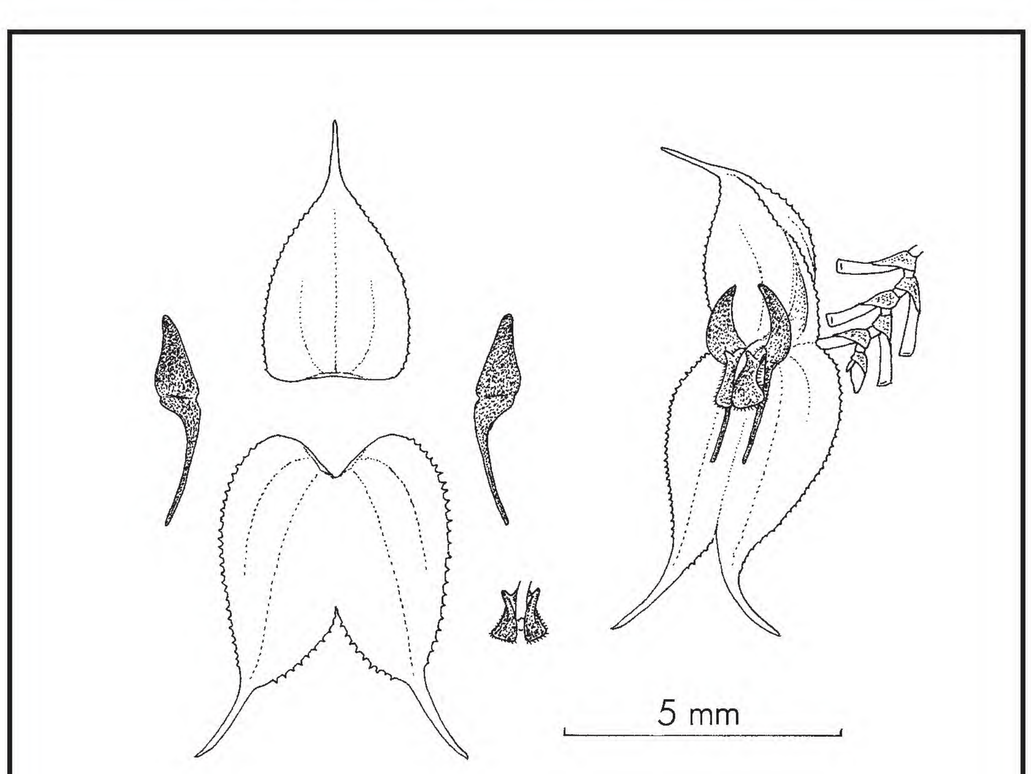



Fig. 169. Lepanthes lycocephala

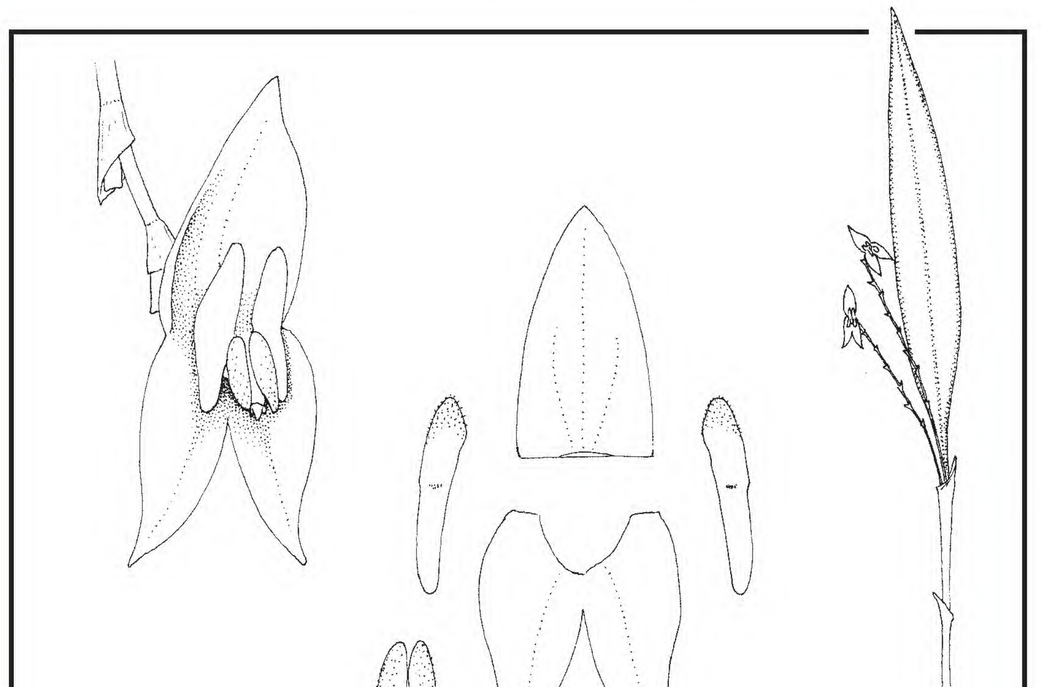



Fig. 170. Lepanthes macdougalii

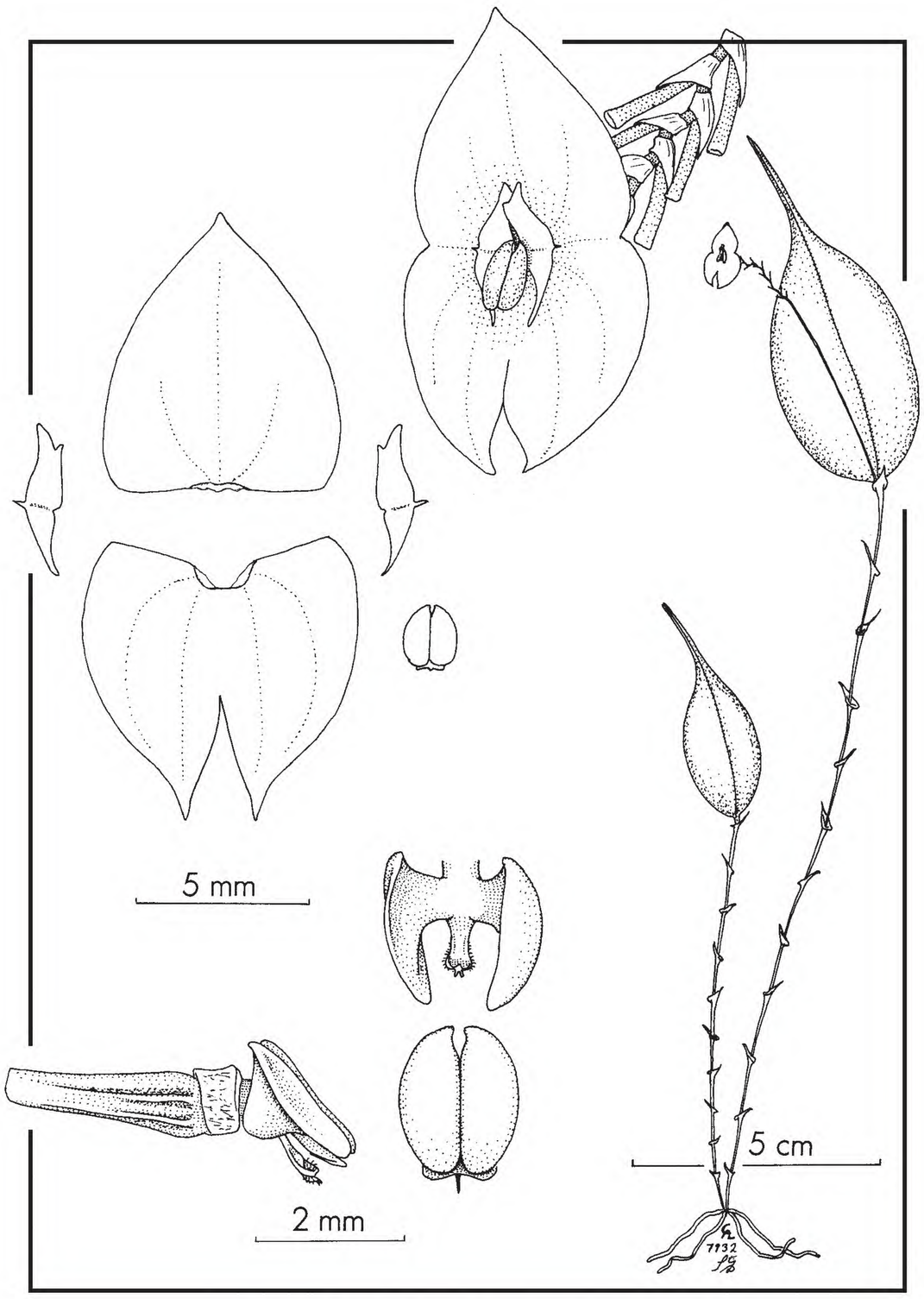



Fig. 171. Lepanthes macrantha

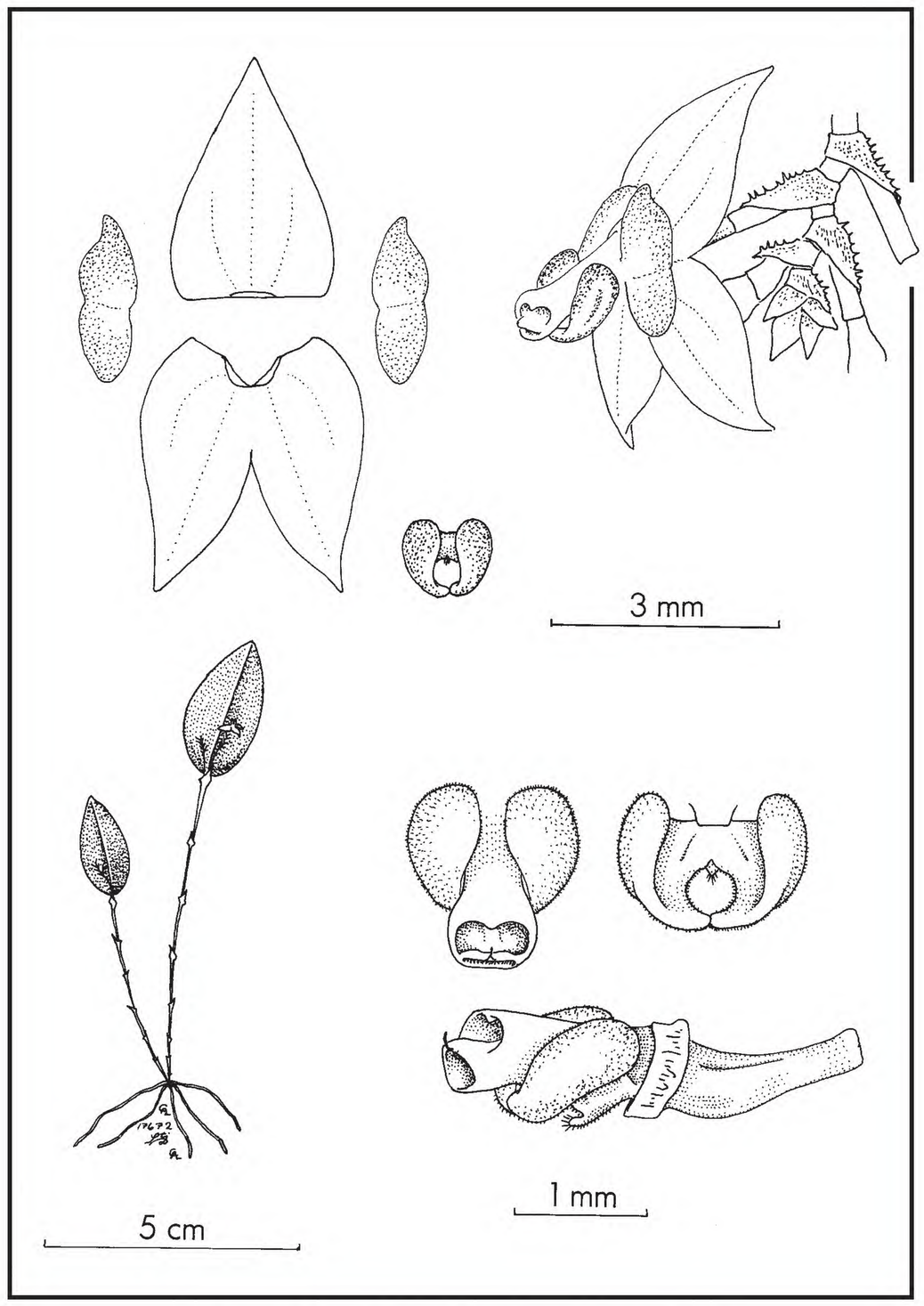



Fig. 172. Lepanthes macrostylis

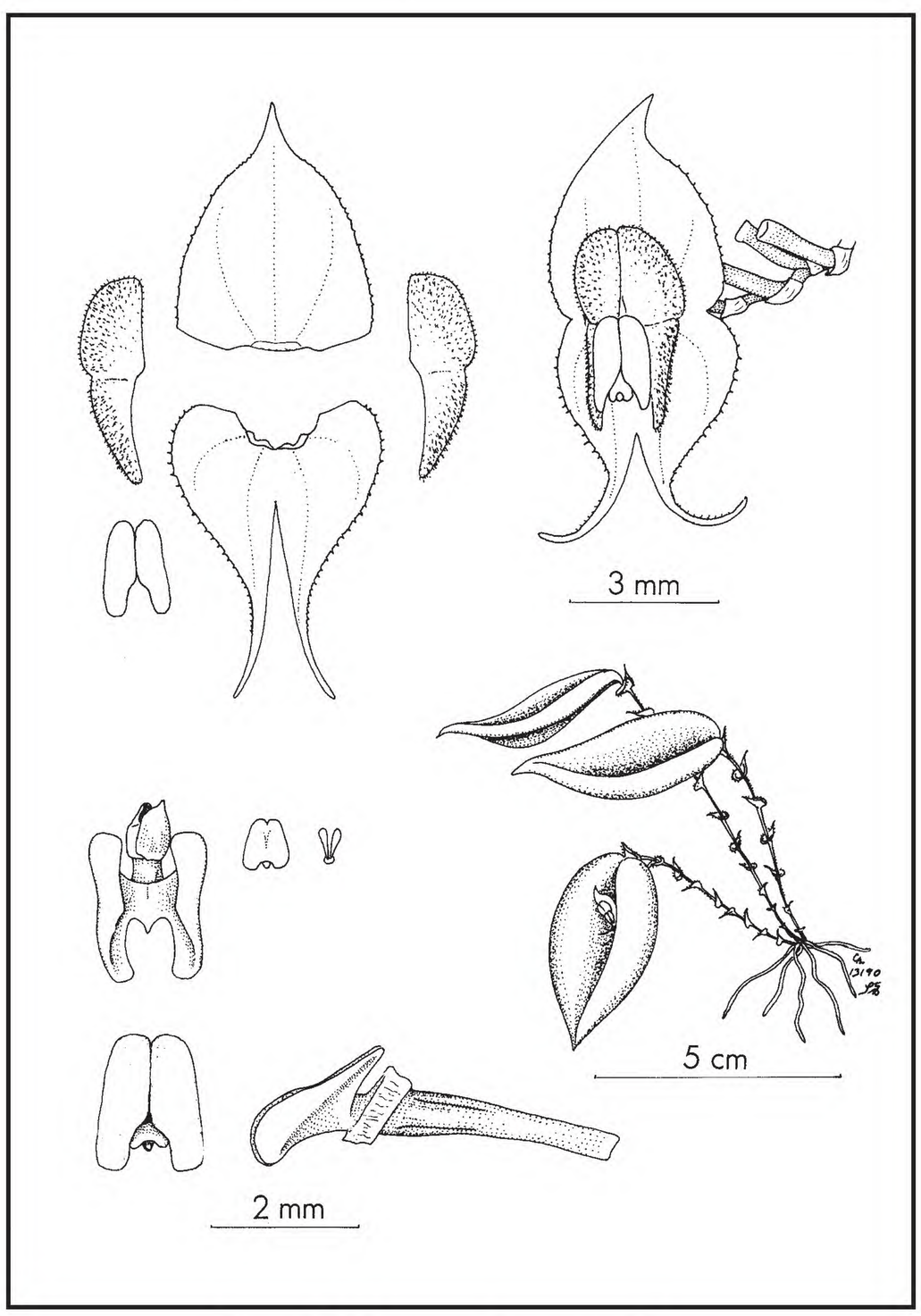



Fig. 173. Lepanthes manabina

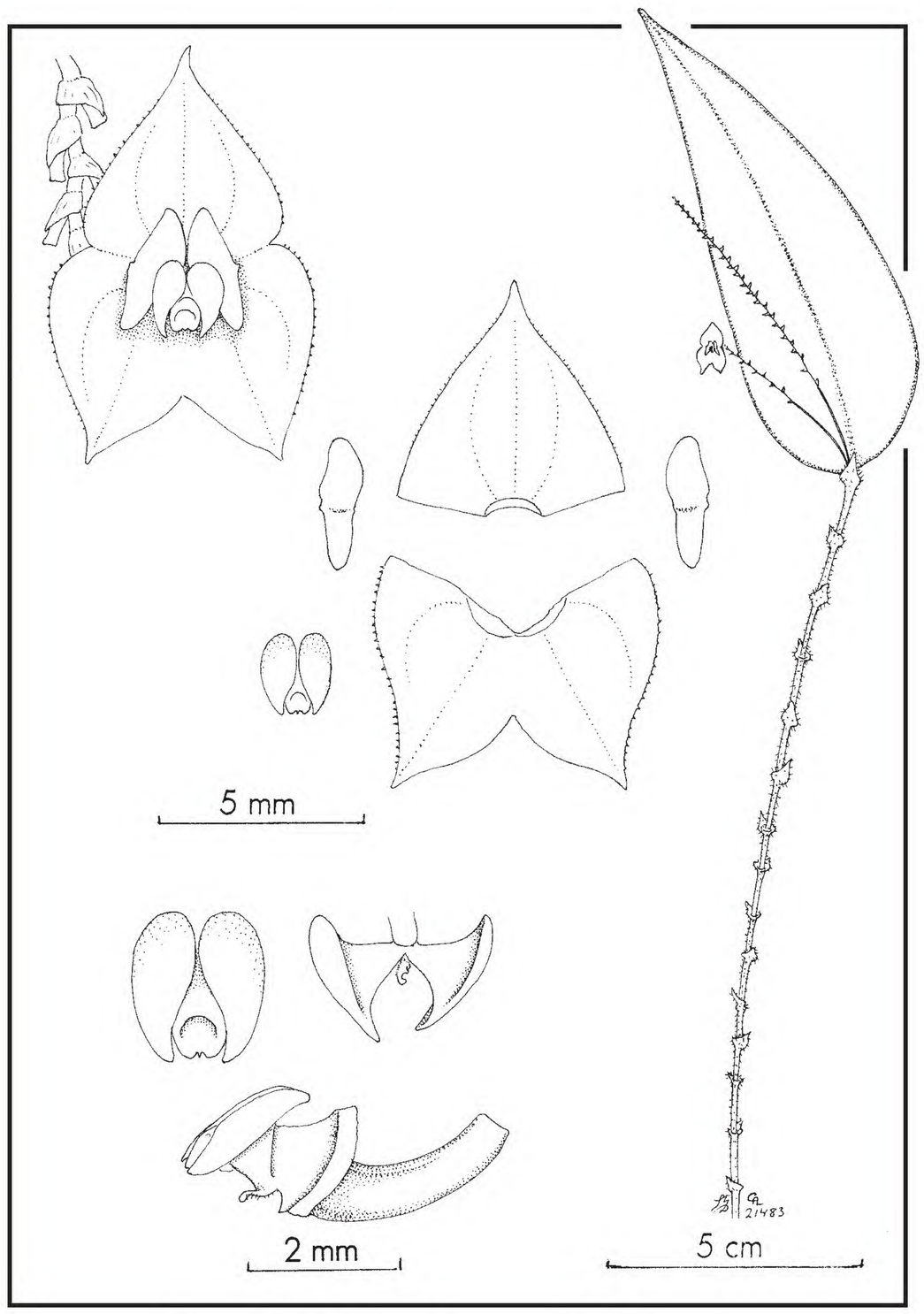



Fig. 174. Lepanthes maria-victoriae

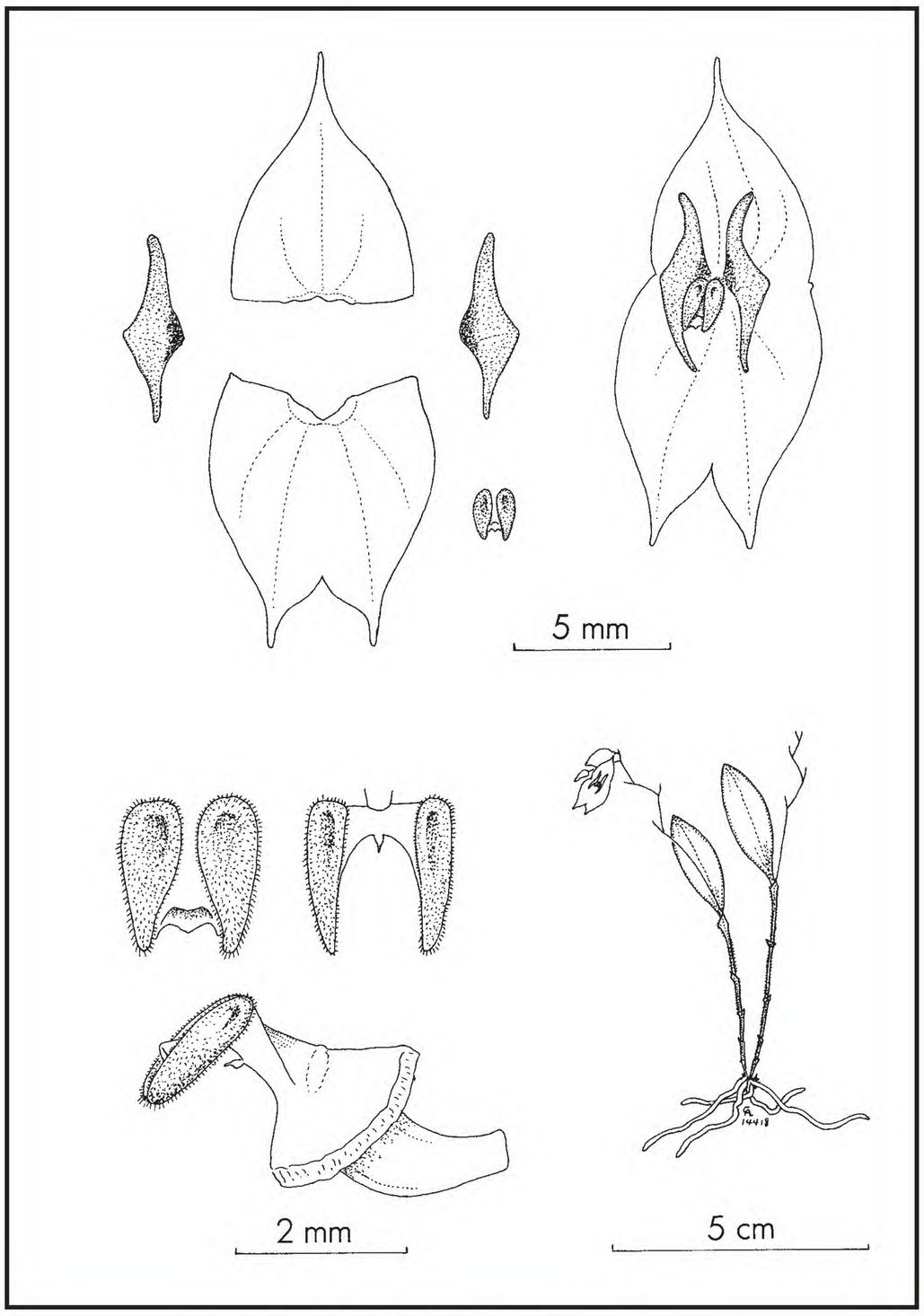



Fig. 175. Lepanthes marthae

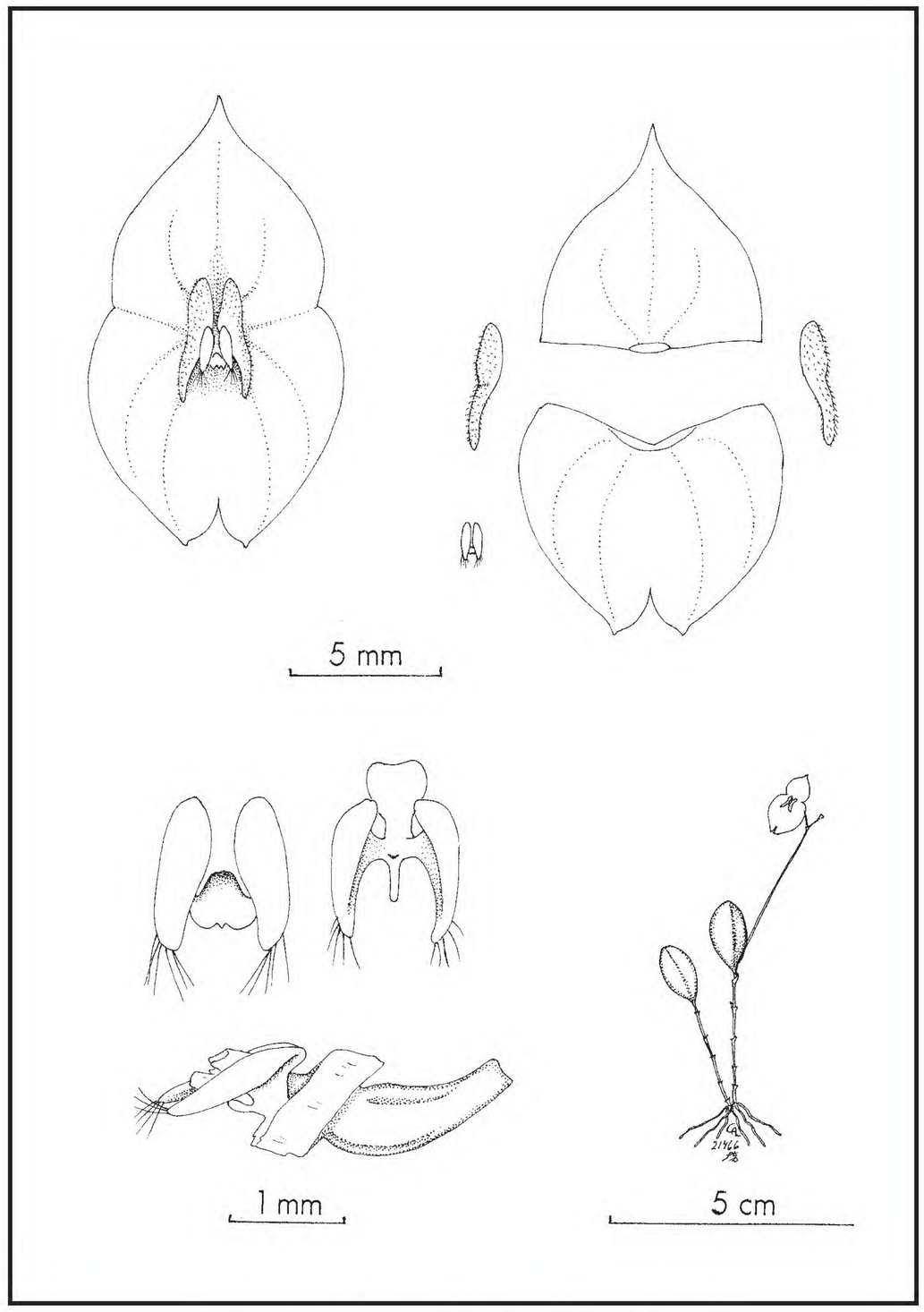



Fig. 176. Lepanthes matisii

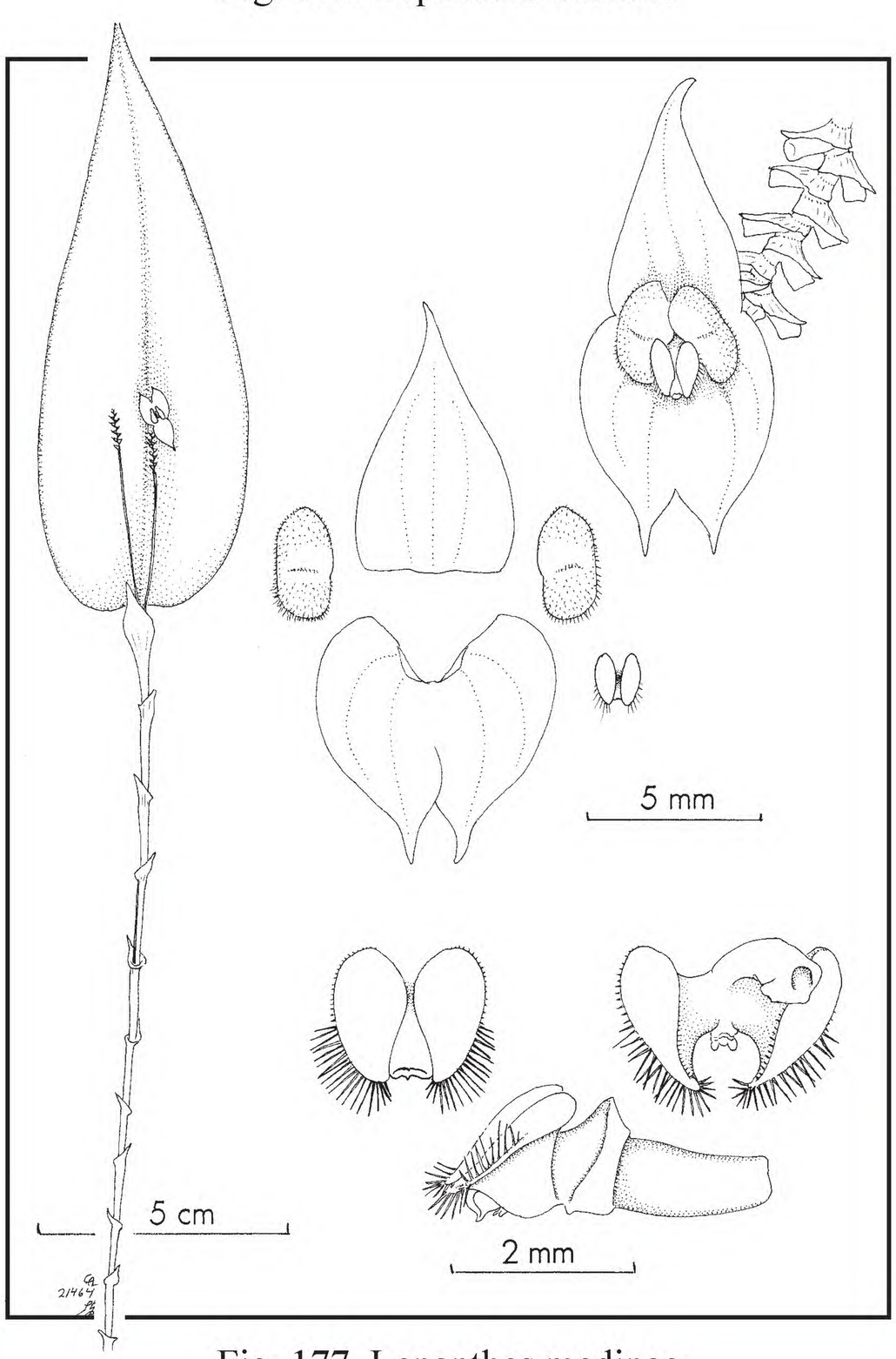



Fig. 177. Lepanthes medinae

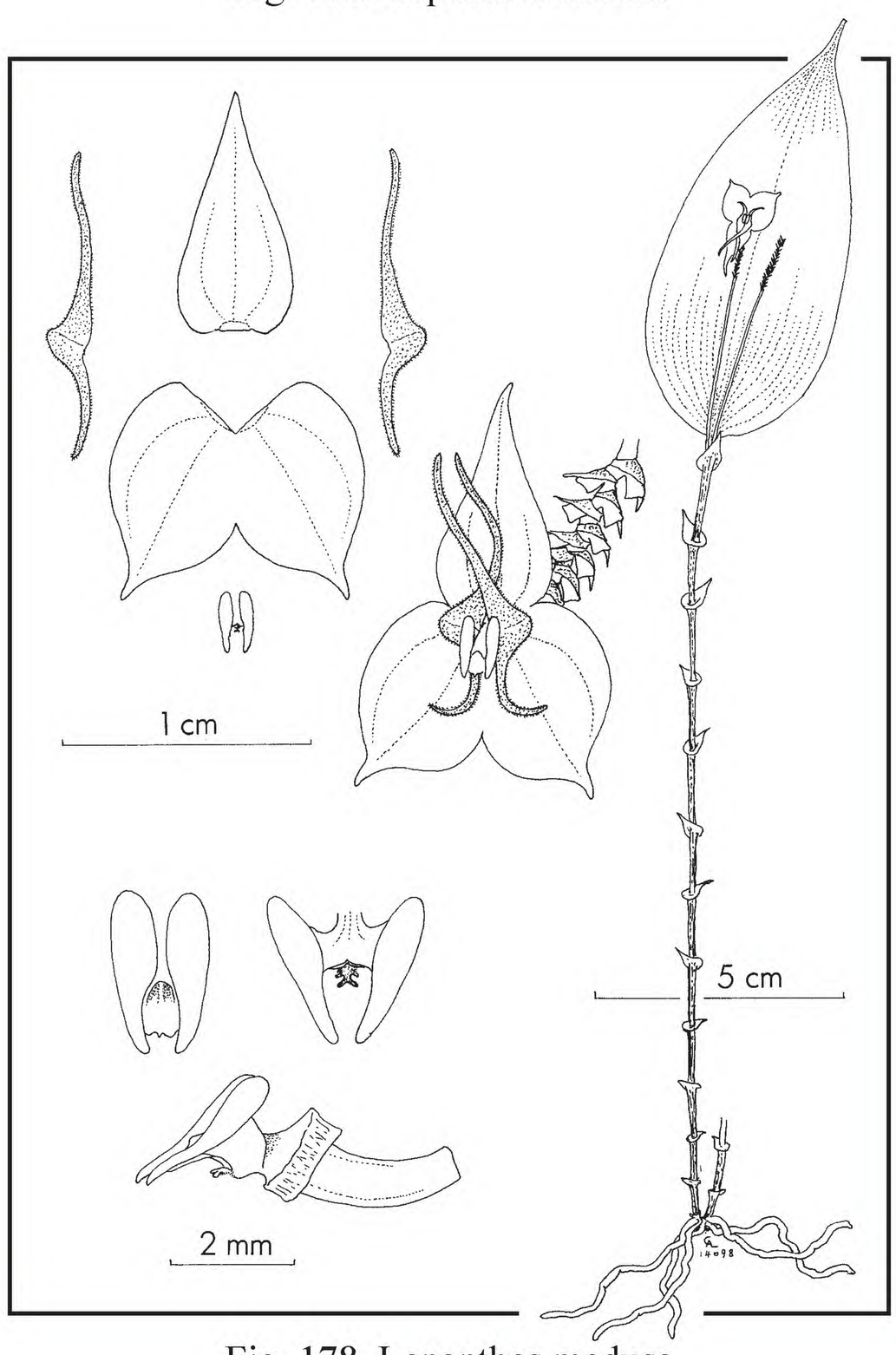



Fig. 178. Lepanthes medusa

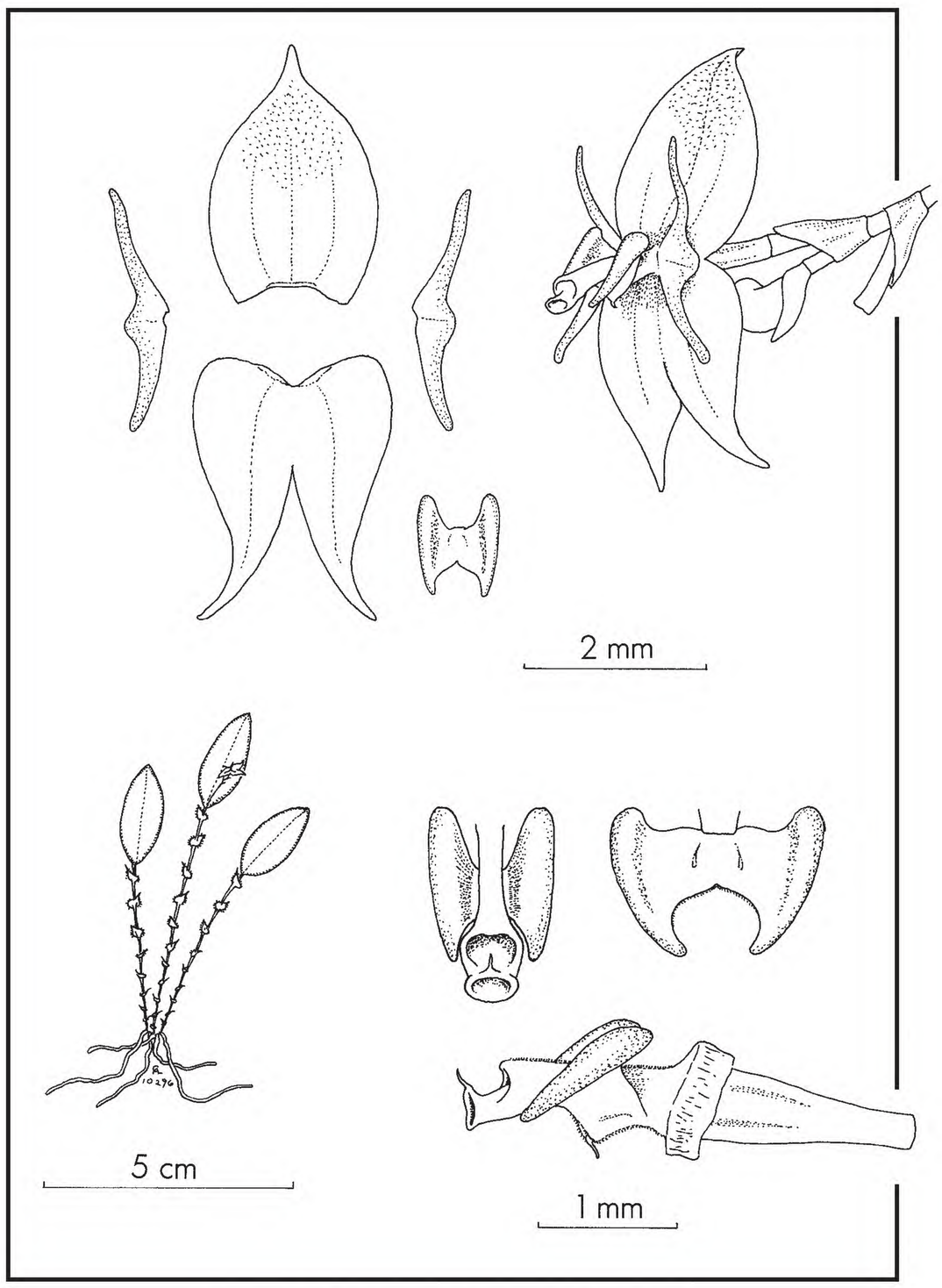



Fig. 179. Lepanthes mefueënsis

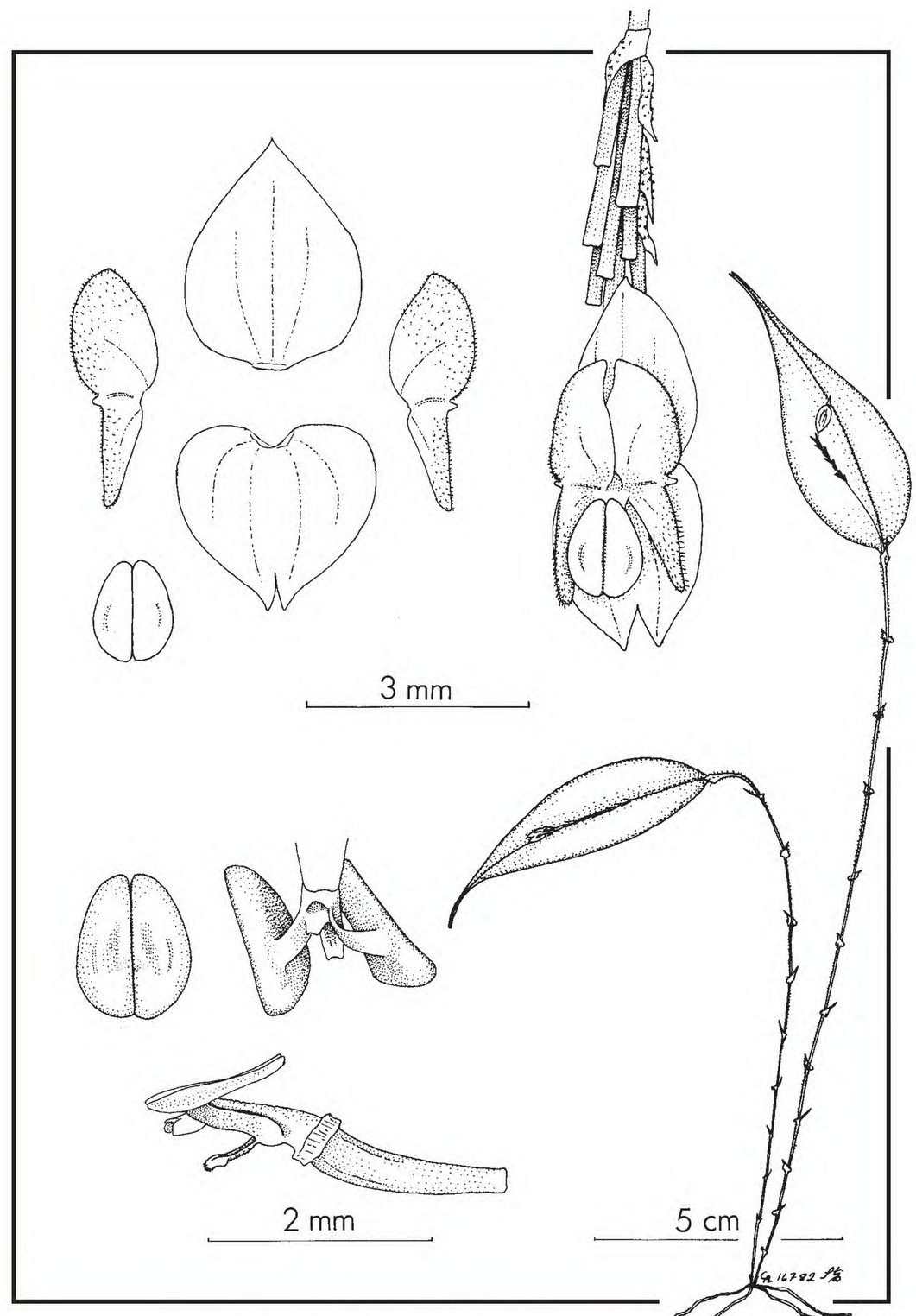



Fig. 180. Lepanthes meleagris

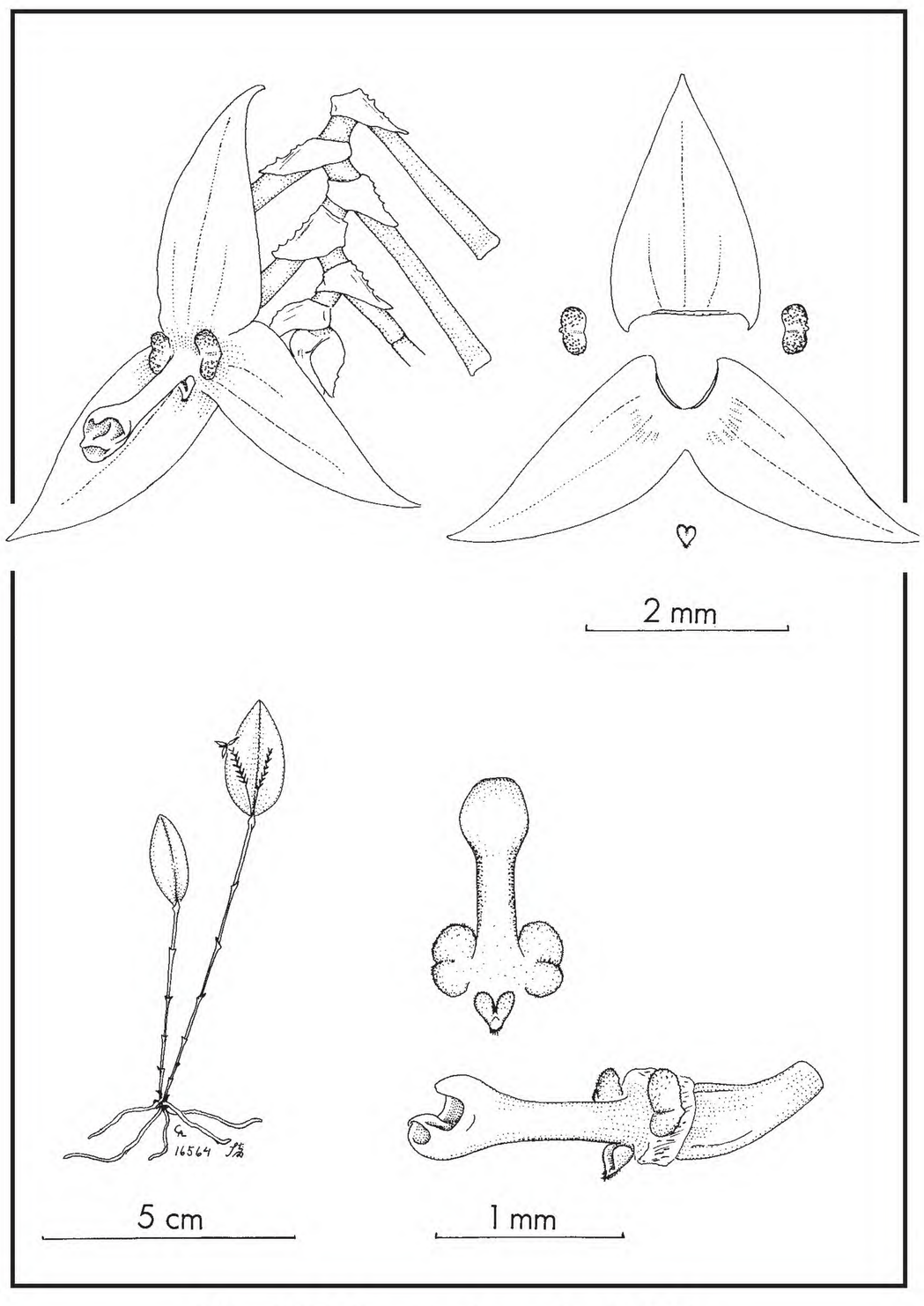



Fig. 181. Lepanthes micellilabia

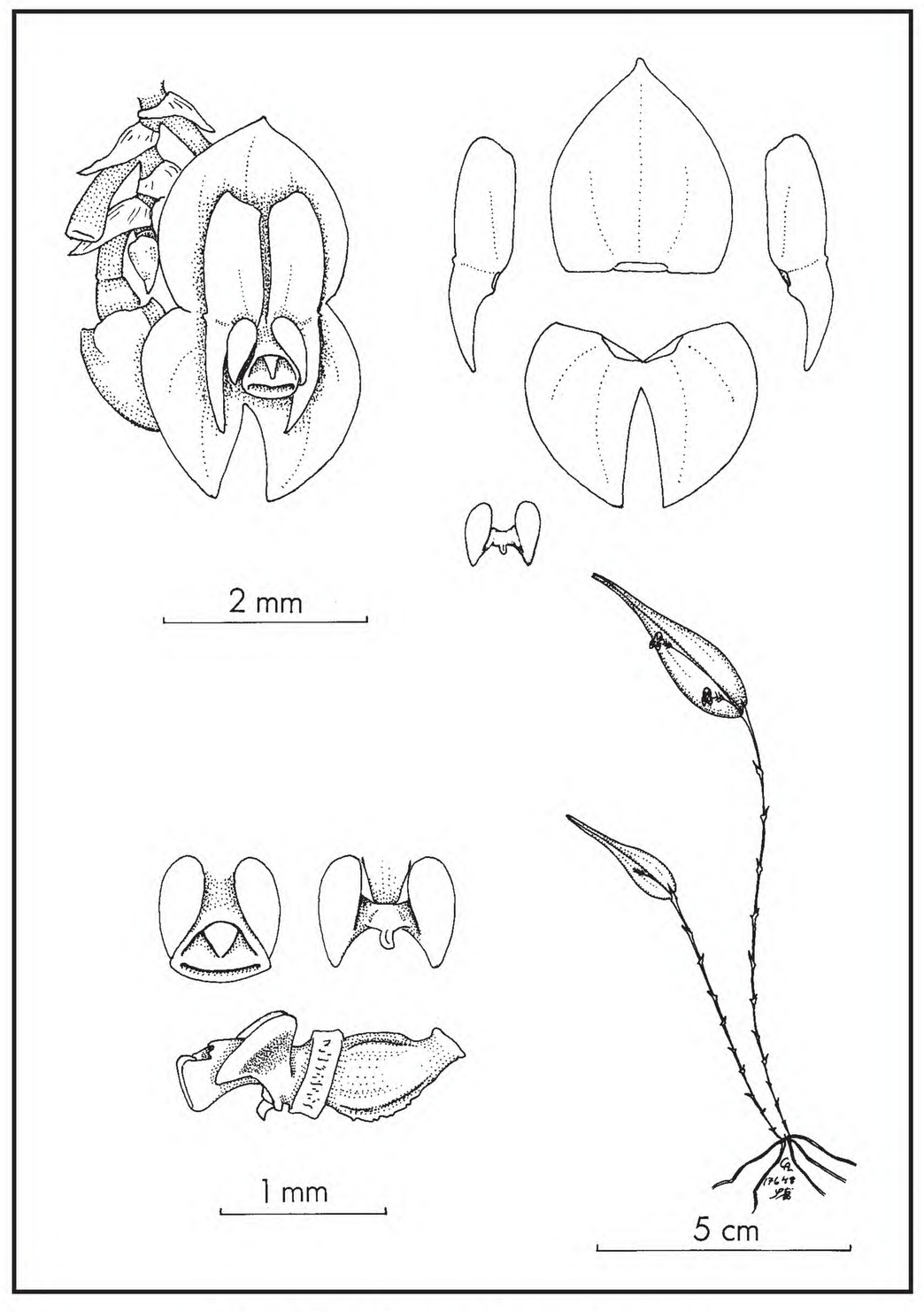



Fig. 182. Lepanthes micronyx

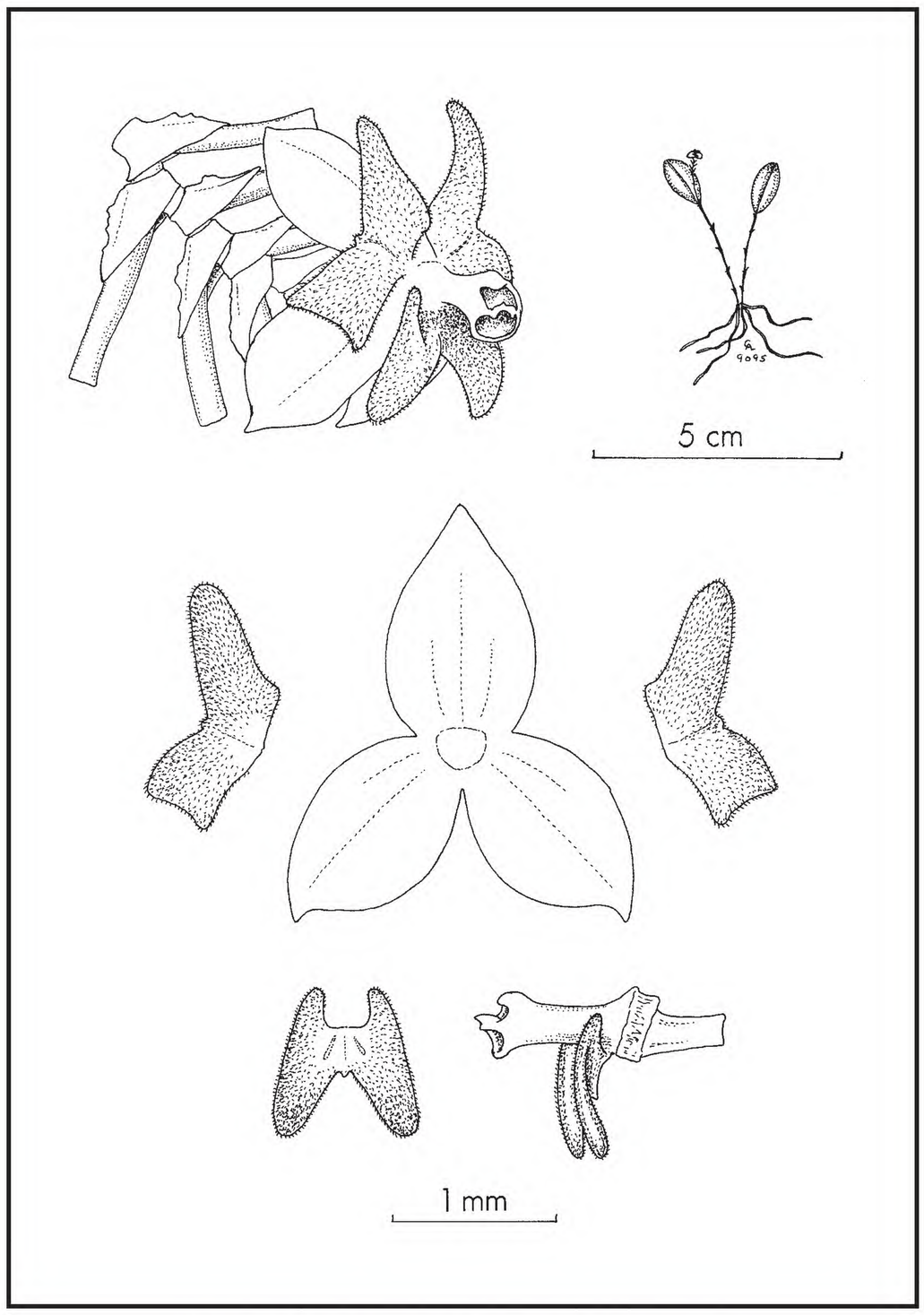



Fig. 183. Lepanthes microscopica

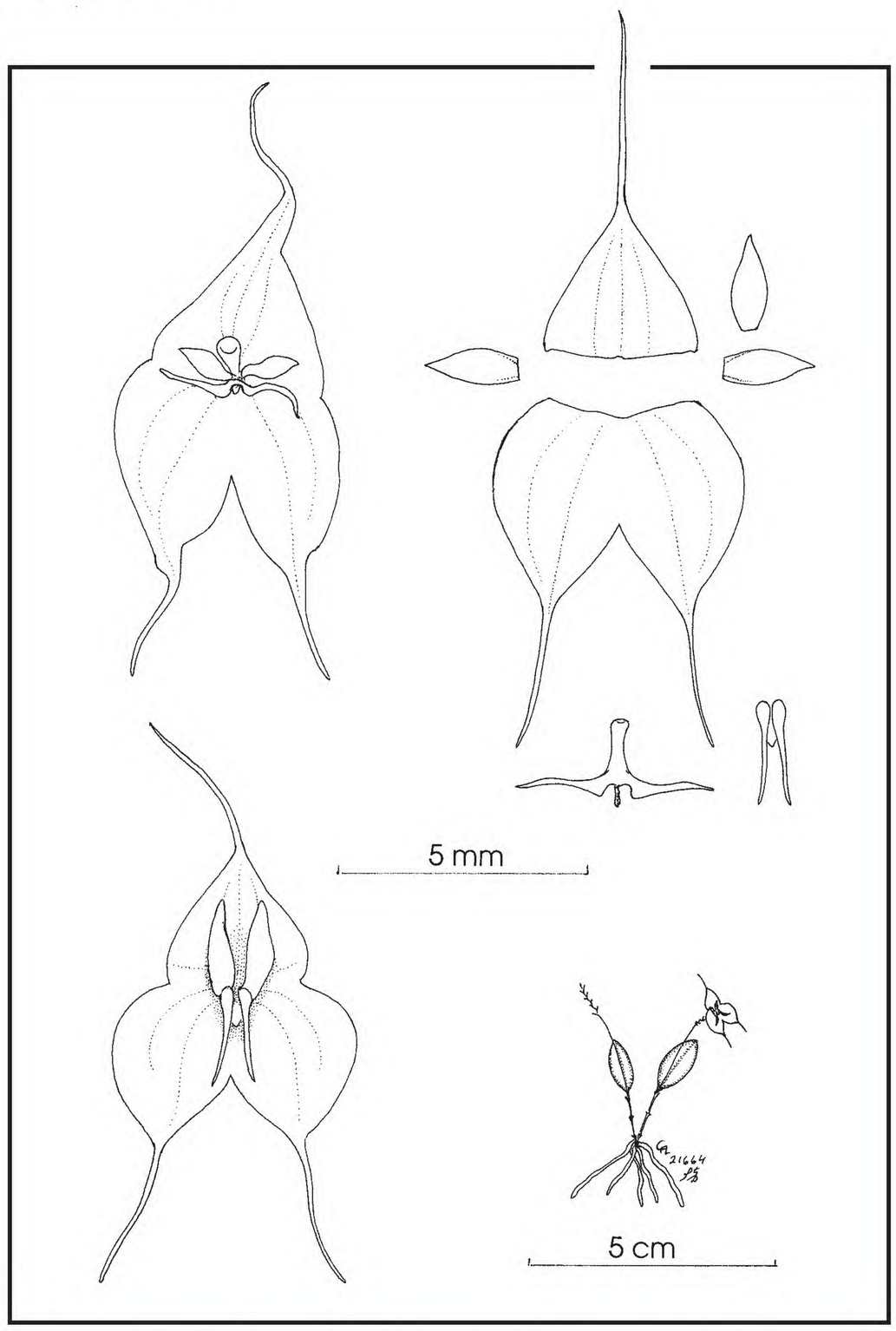



Fig. 184. Lepanthes mirabilis

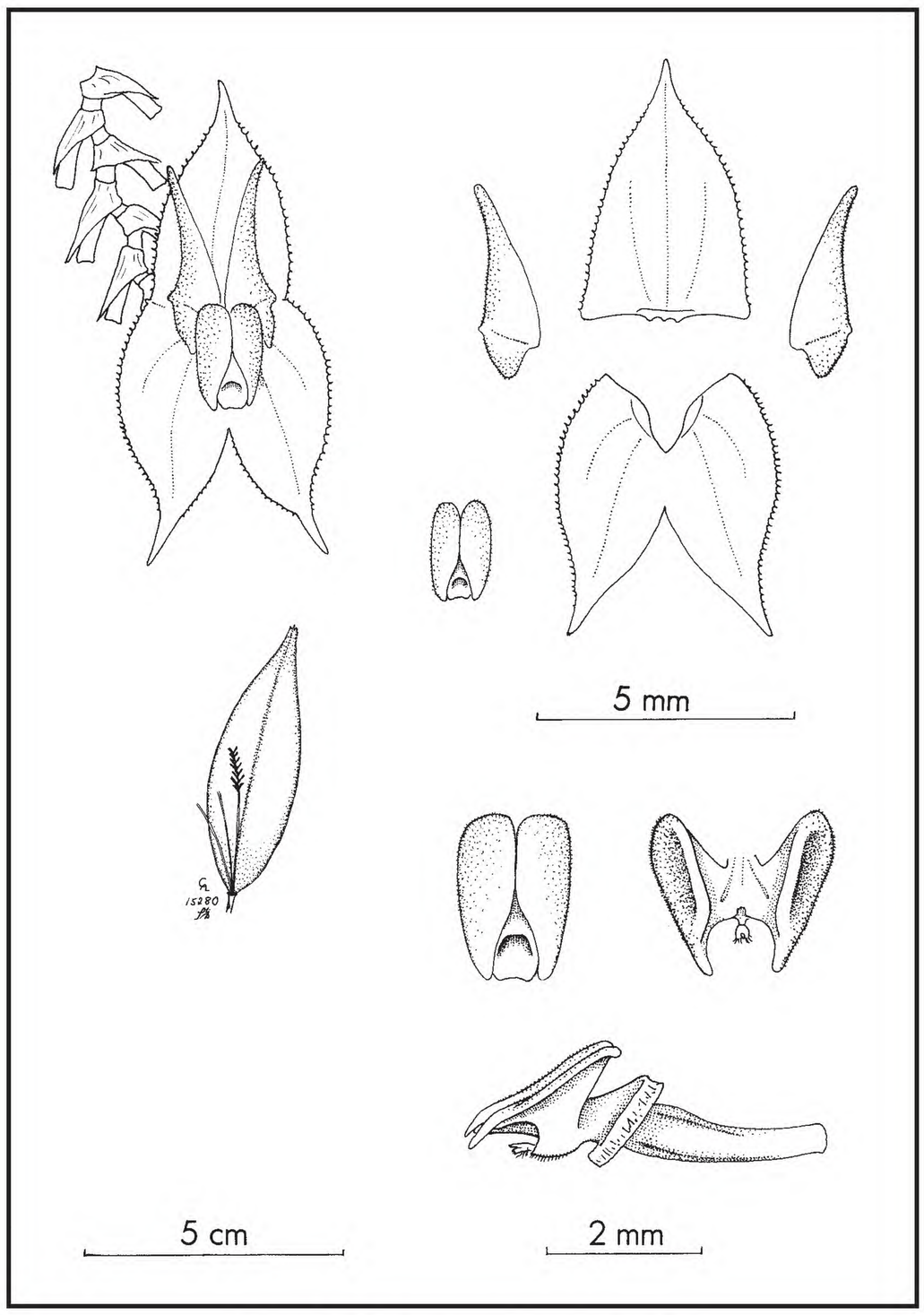



Fig. 185. Lepanthes mirador

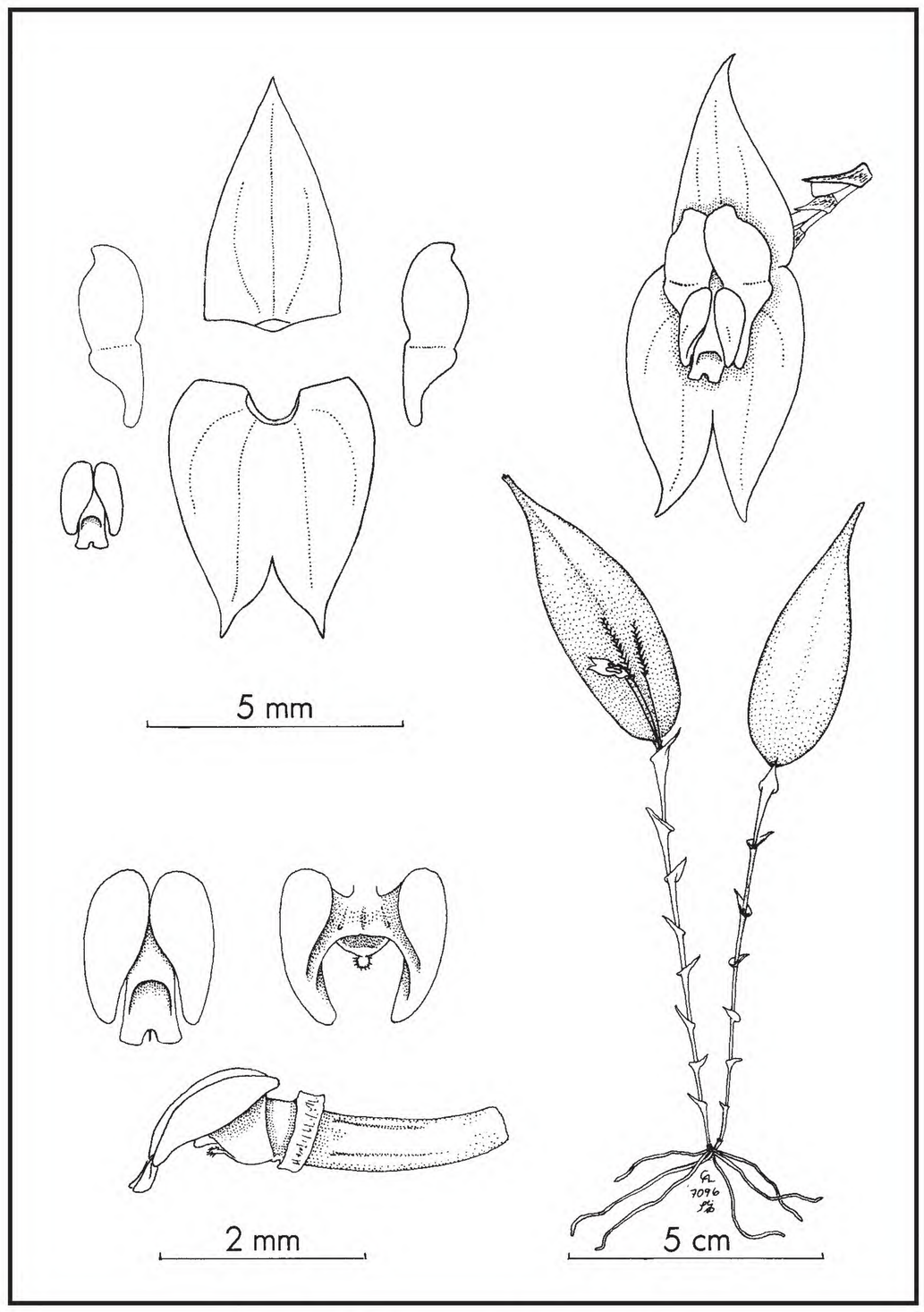



Fig. 186. Lepanthes monitor

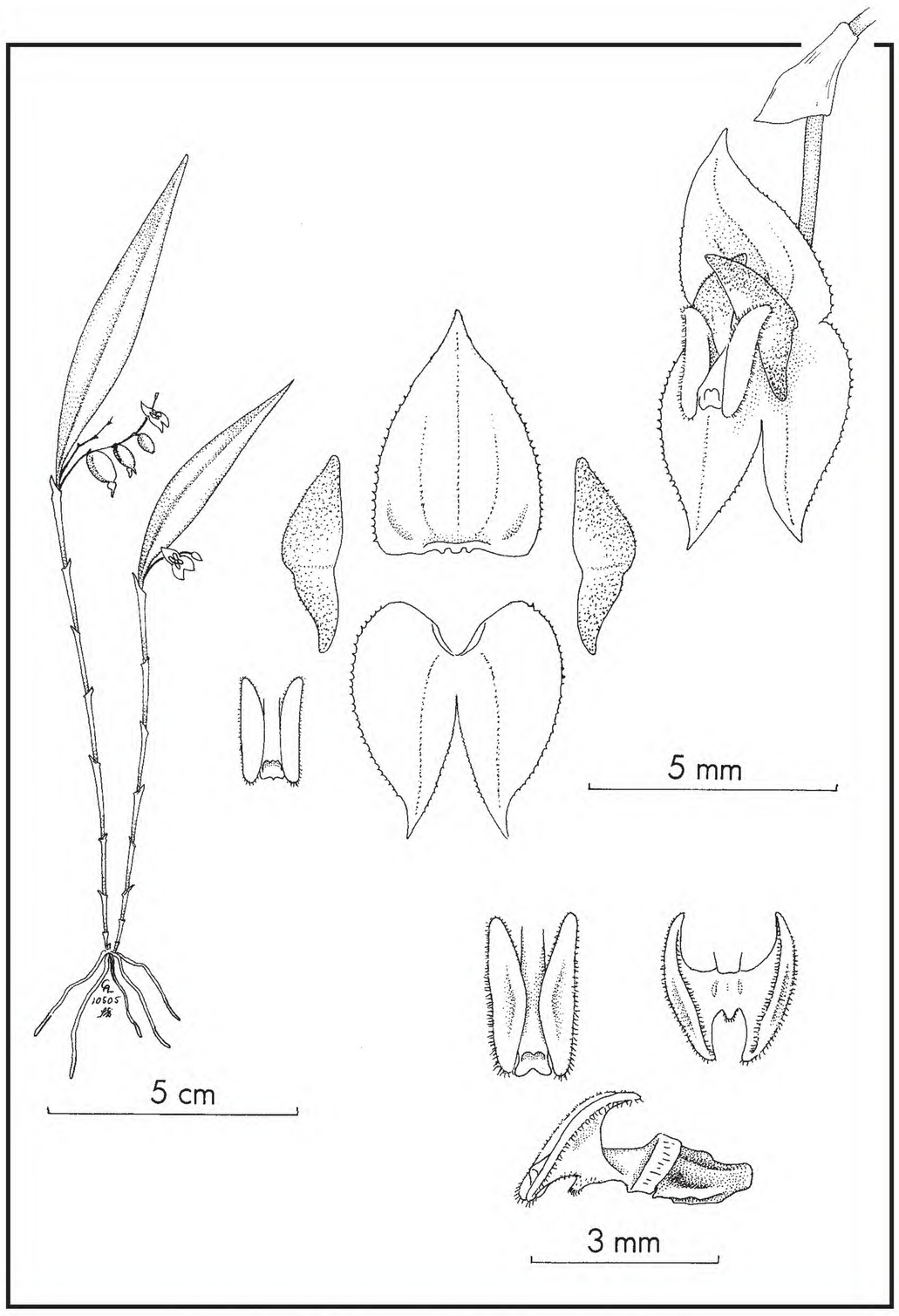



Fig. 187. Lepanthes monoptera

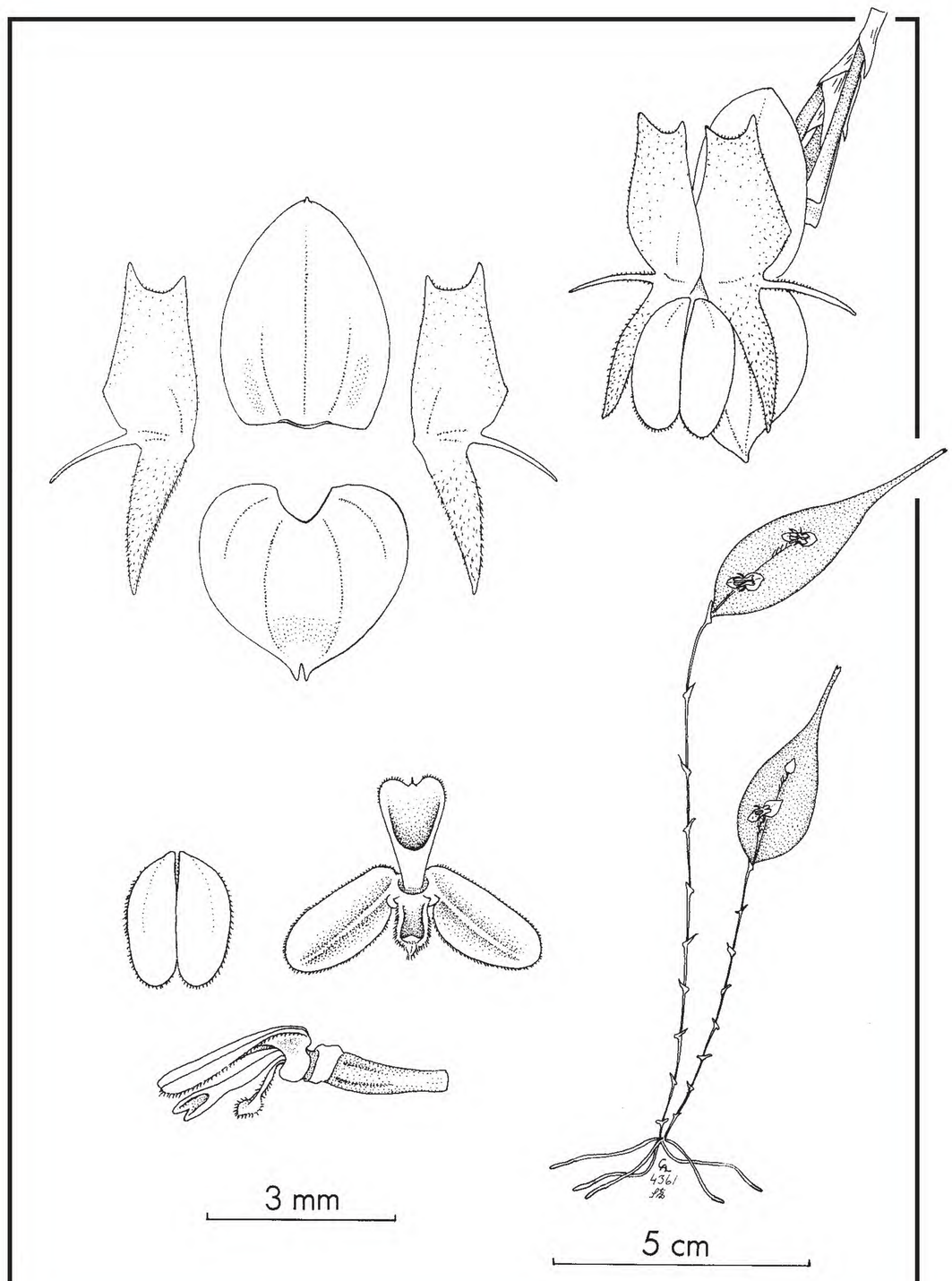



Fig. 188. Lepanthes mucronata

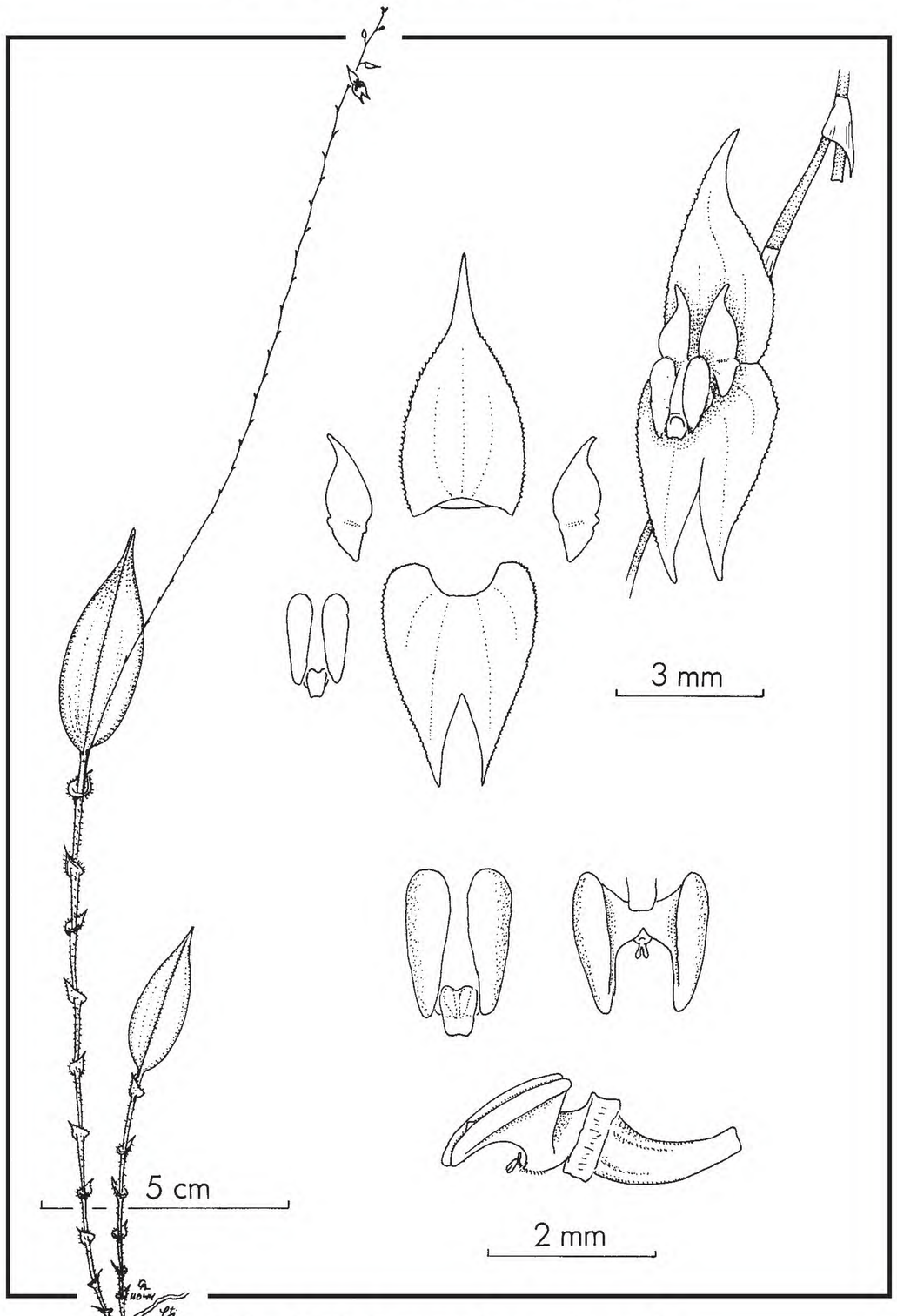



Fig. 189. Lepanthes muscula

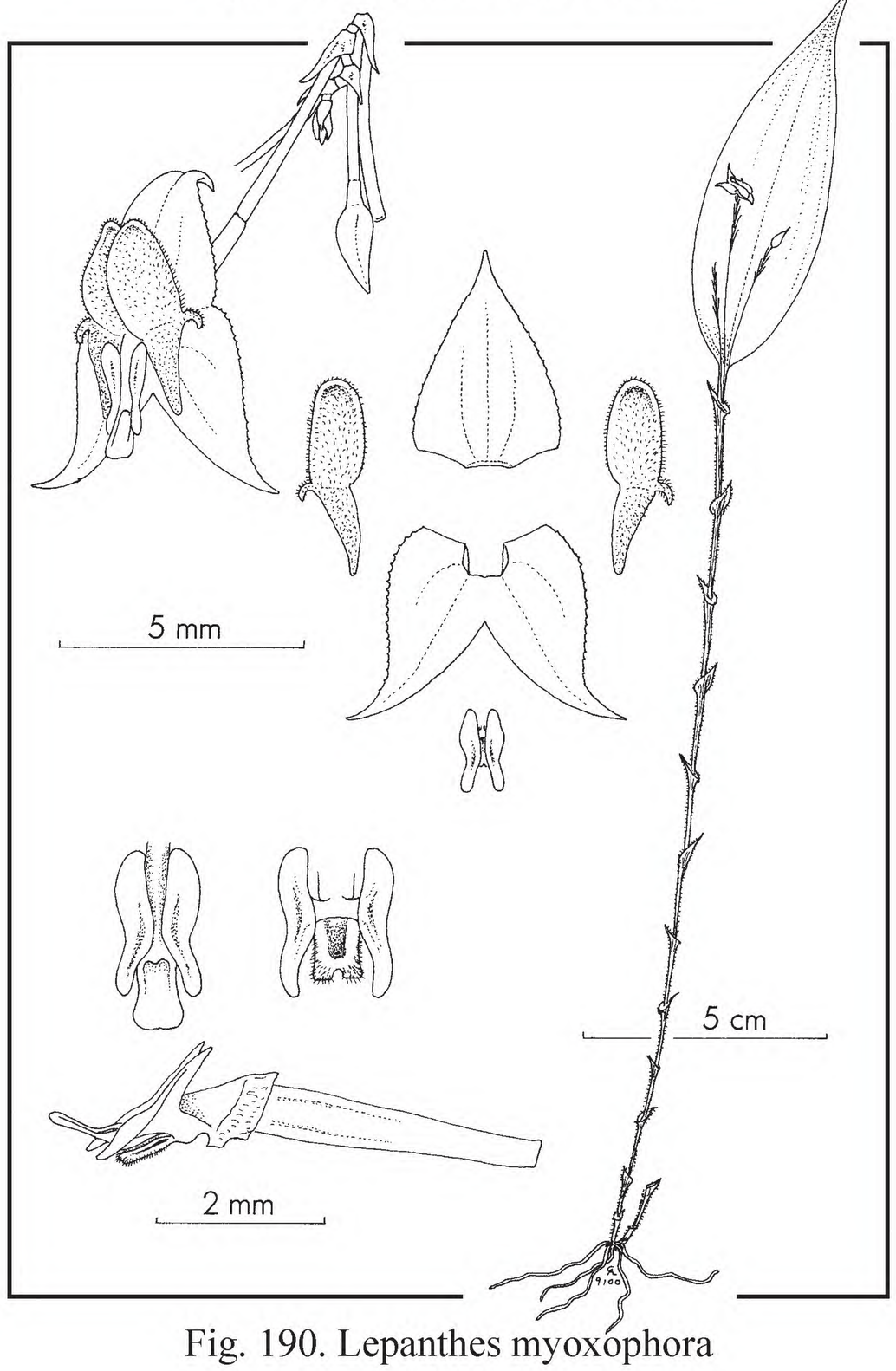



Fig. 190. Lepanthes myoxophora

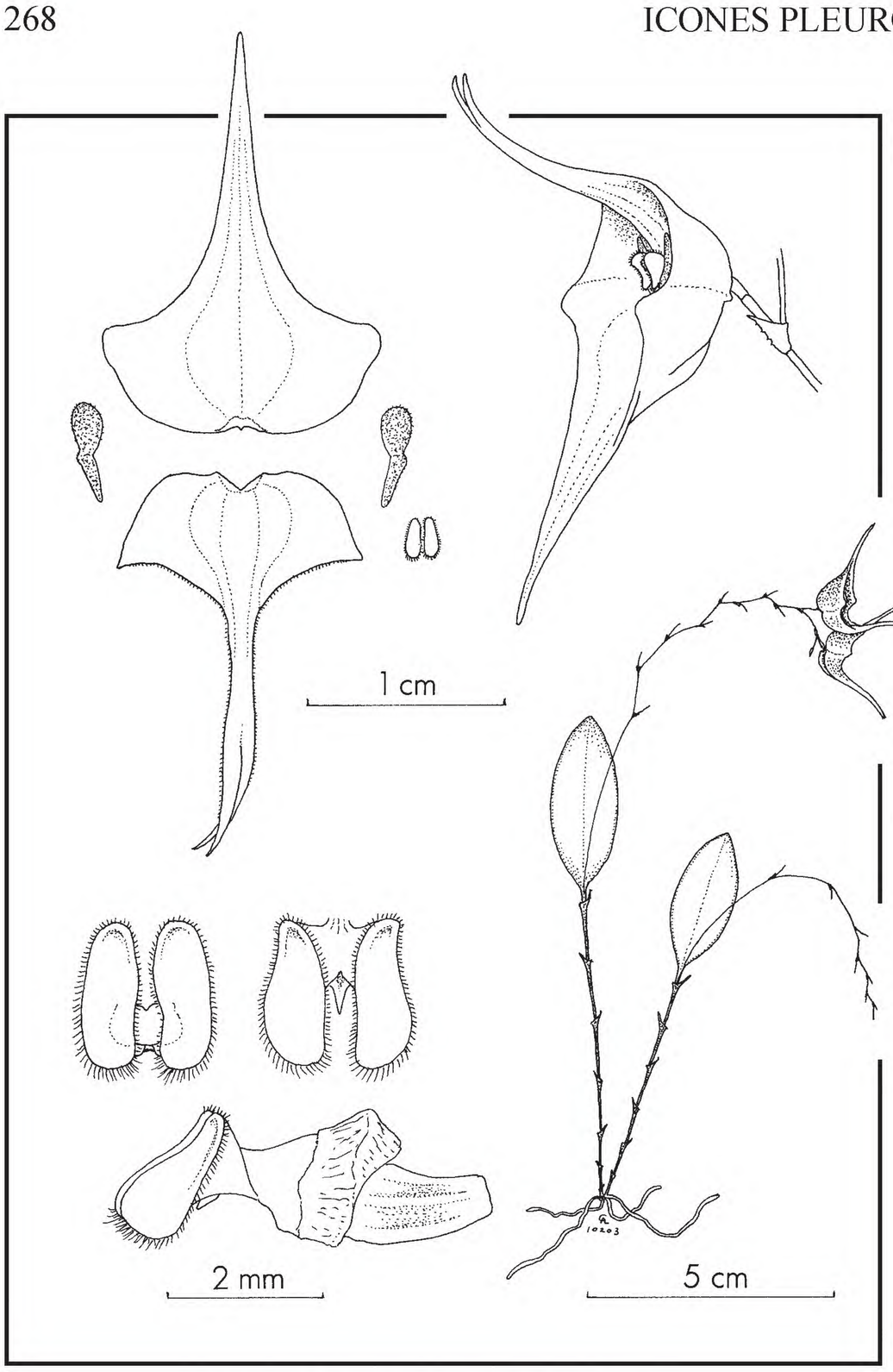



Fig. 191. Lepanthes nautilus

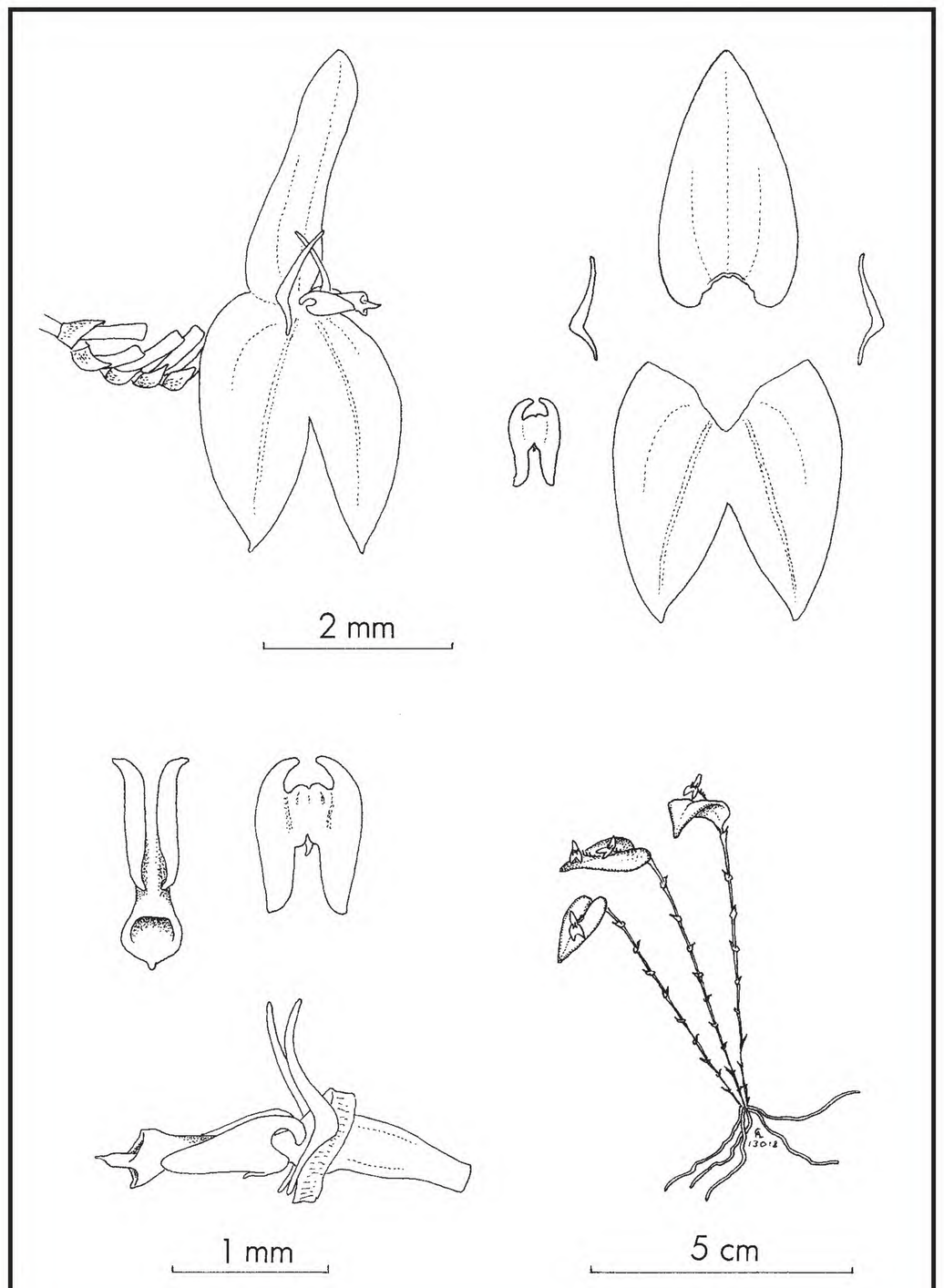



Fig. 192. Lepanthes nematodes

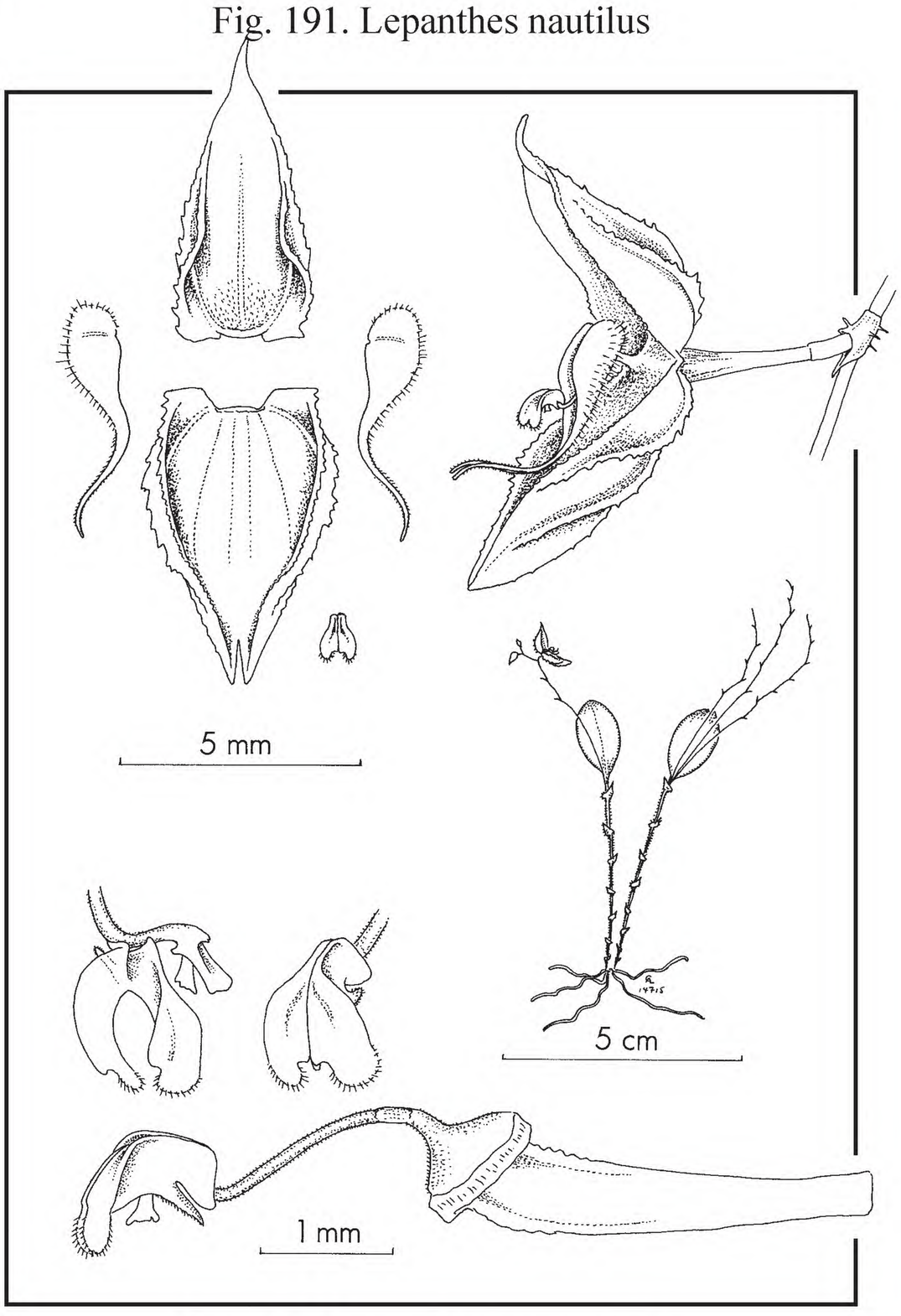



Fig. 193. Lepanthes nematostele

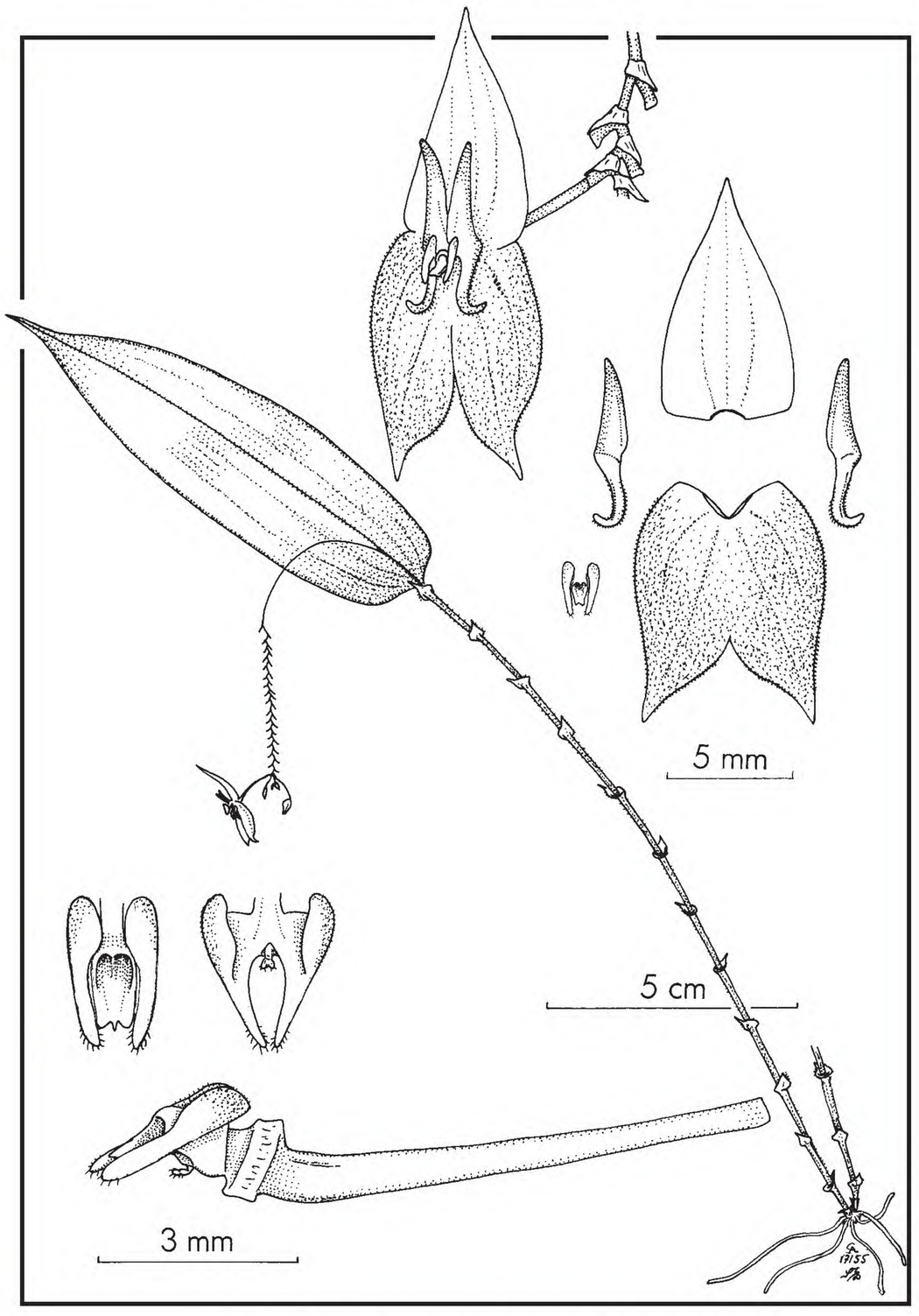



Fig. 194. Lepanthes nicolasii

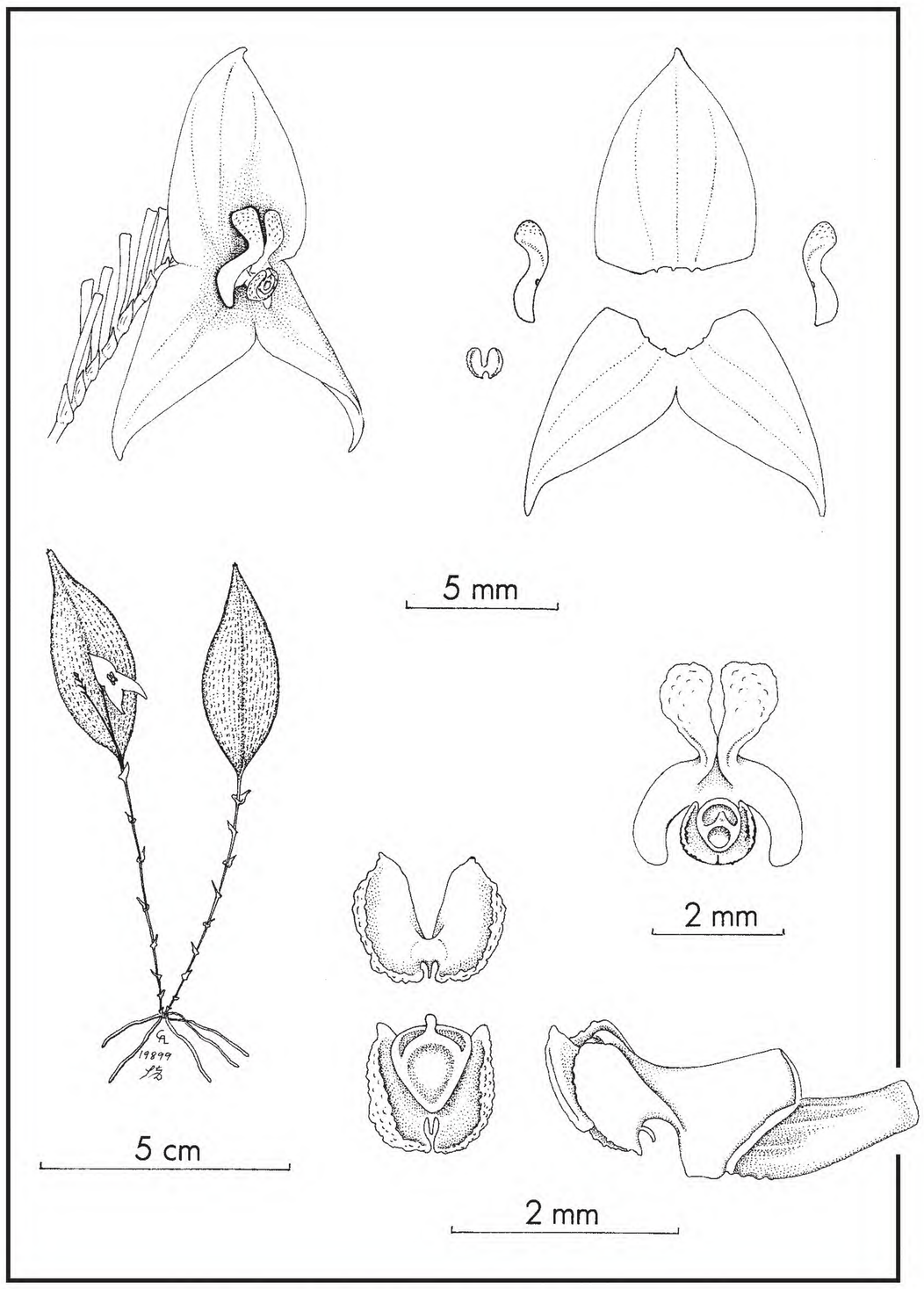



Fig. 195. Lepanthes niesseniae

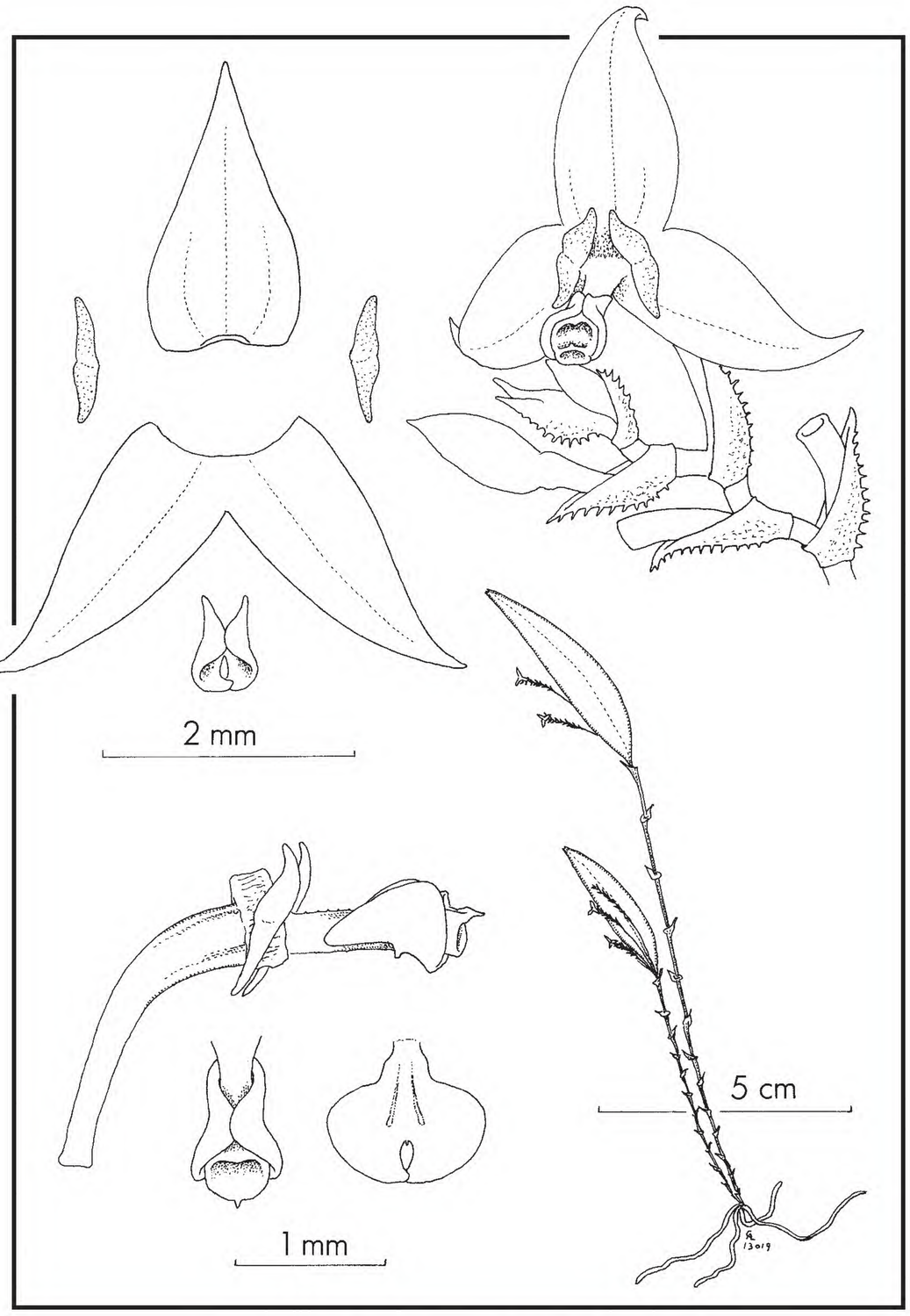



Fig. 196. Lepanthes niphas

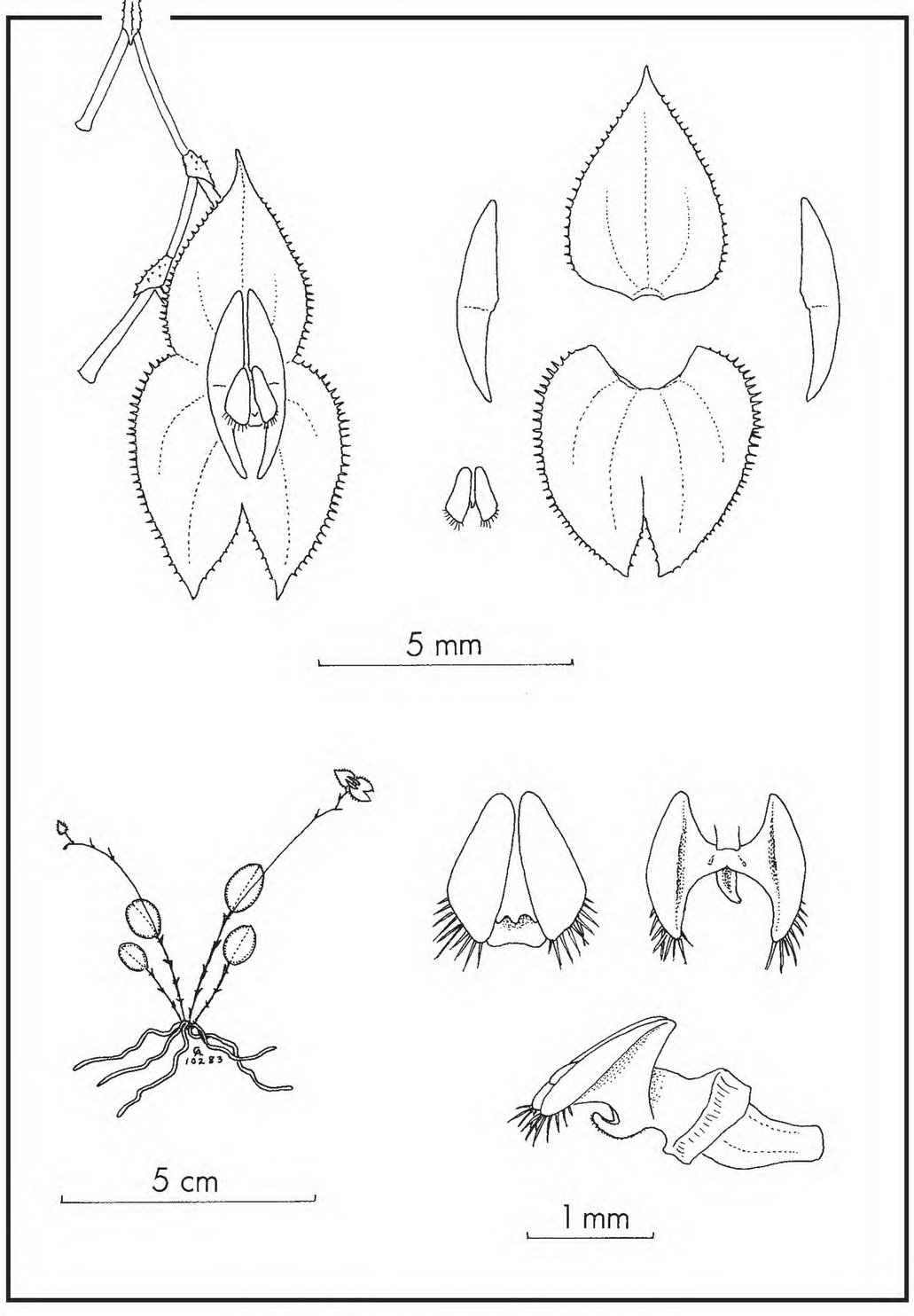



Fig. 197a. Lepanthes norae

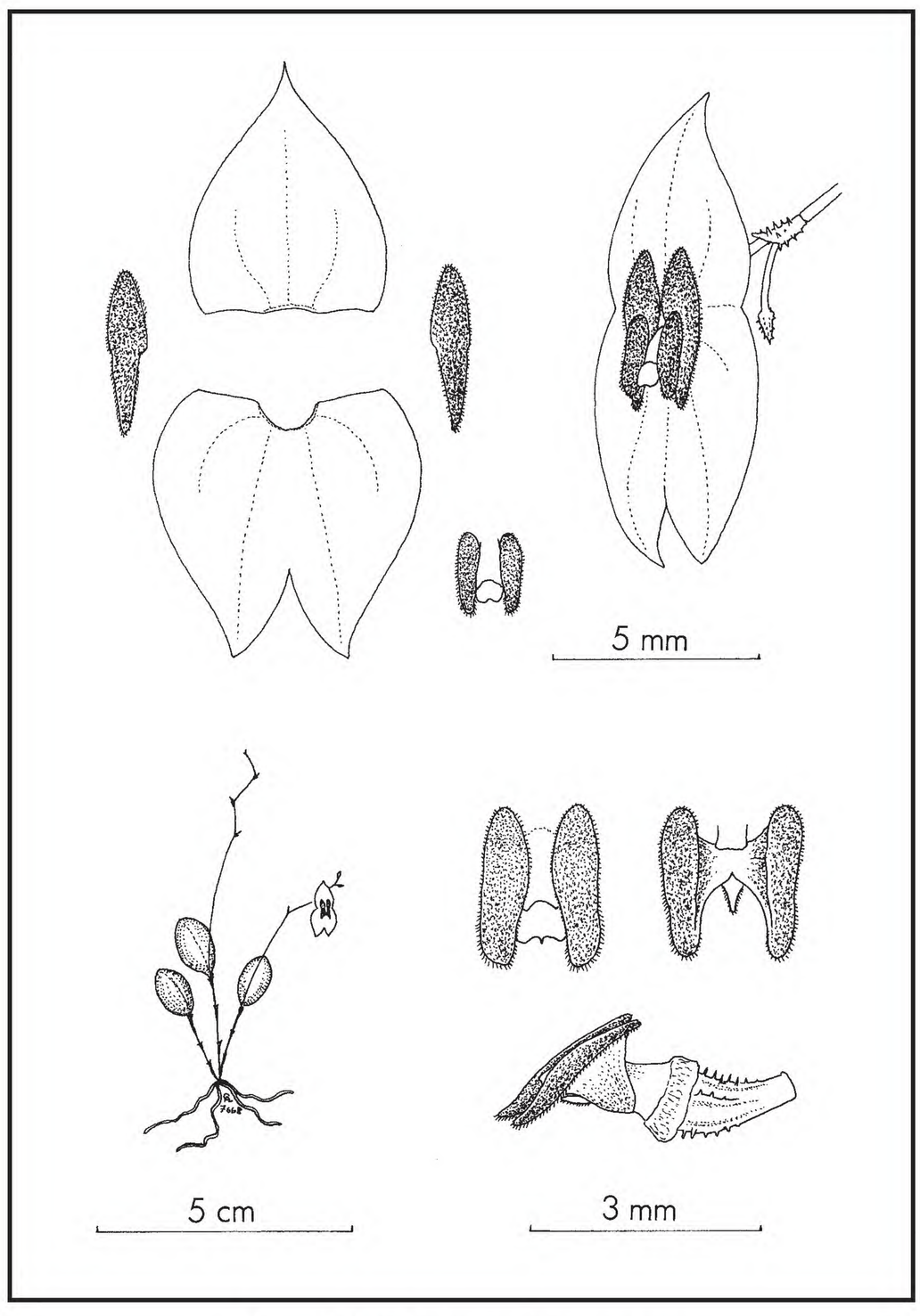



Fig. 197b. Lepanthes norae

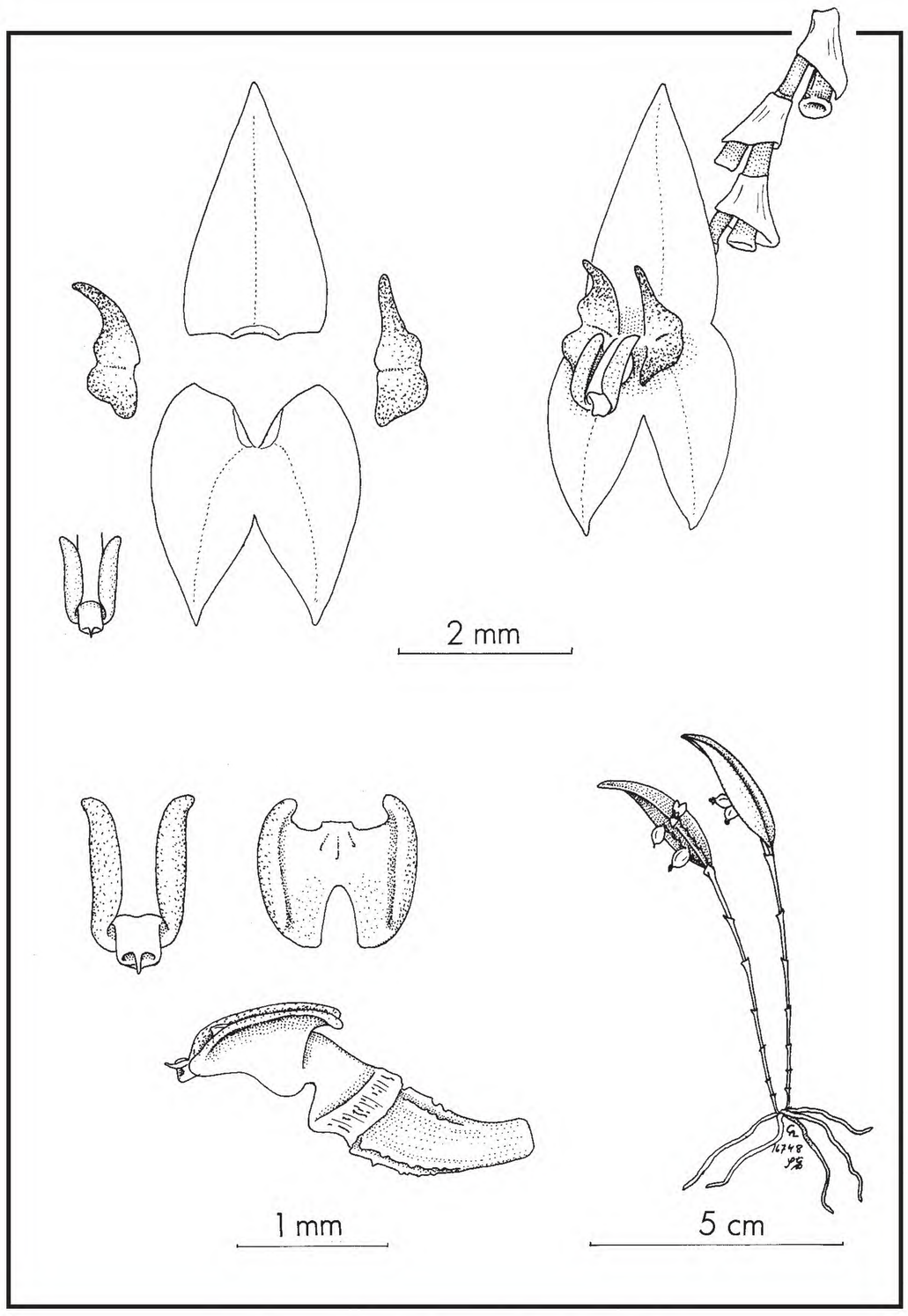



Fig. 198. Lepanthes nulla

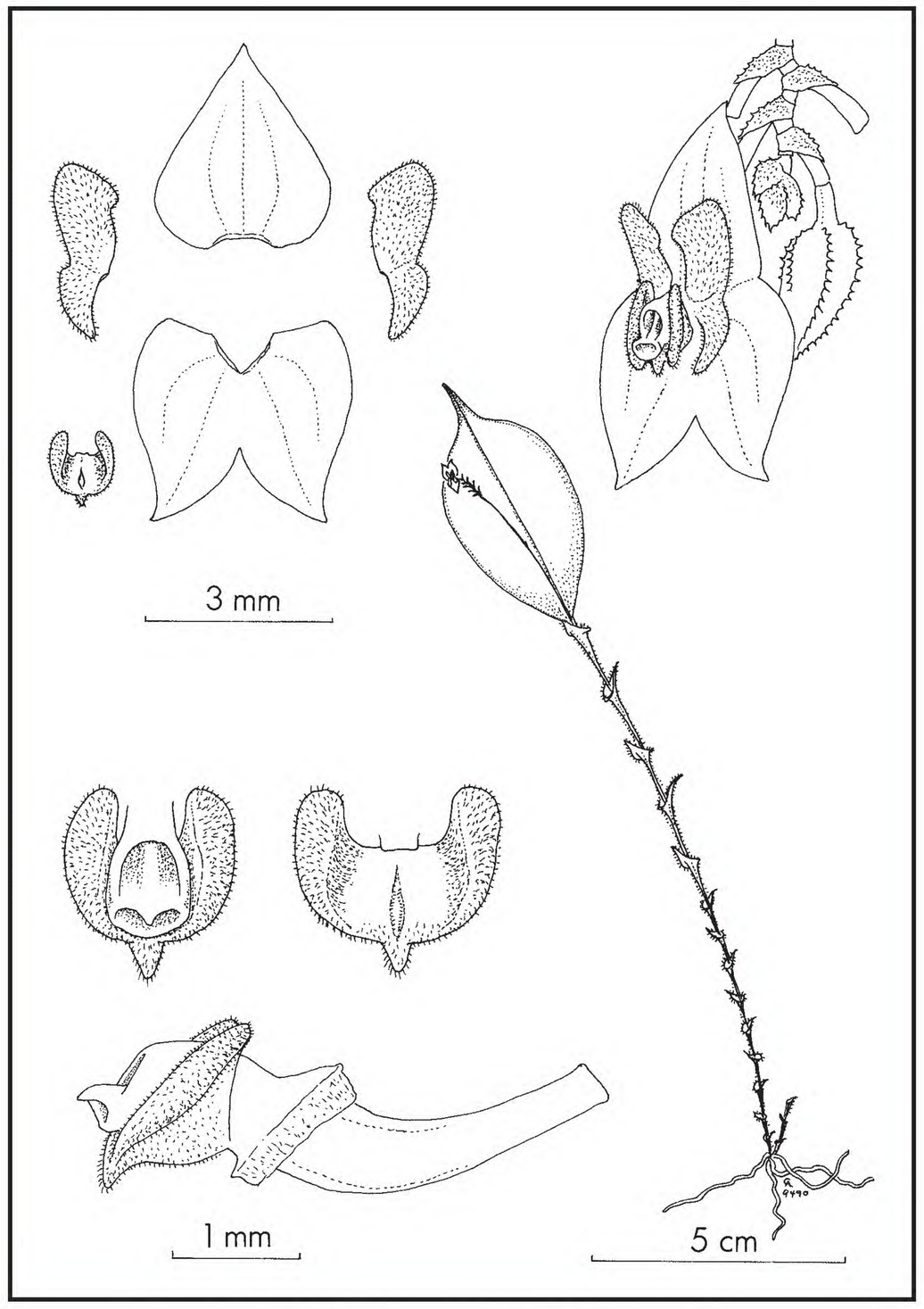



Fig. 199. Lepanthes obovata

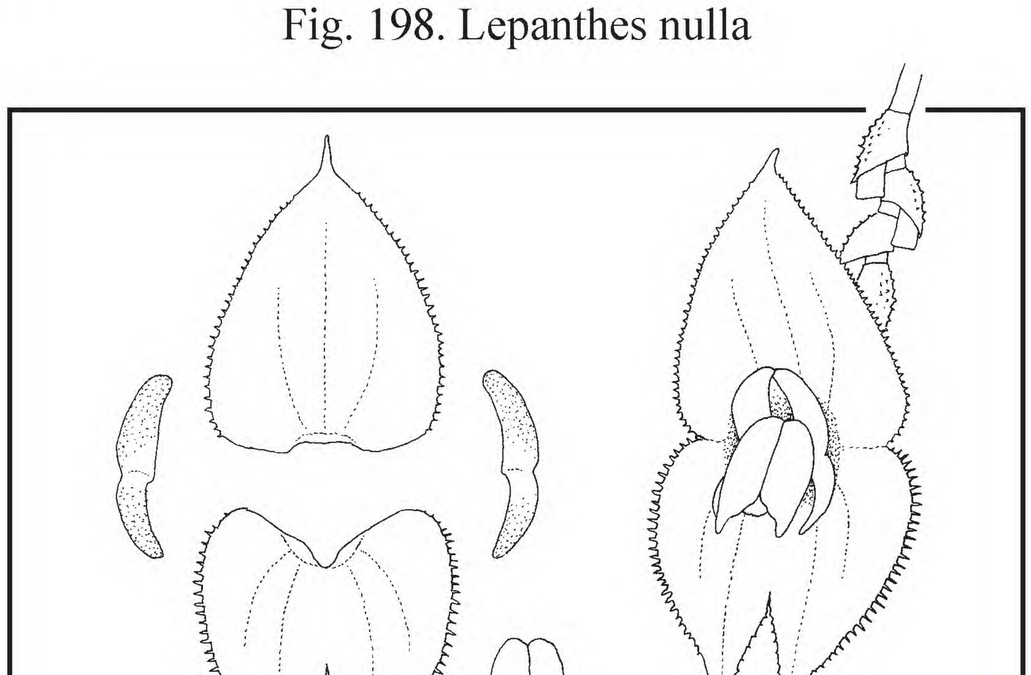



Fig. 200. Lepanthes octavioi

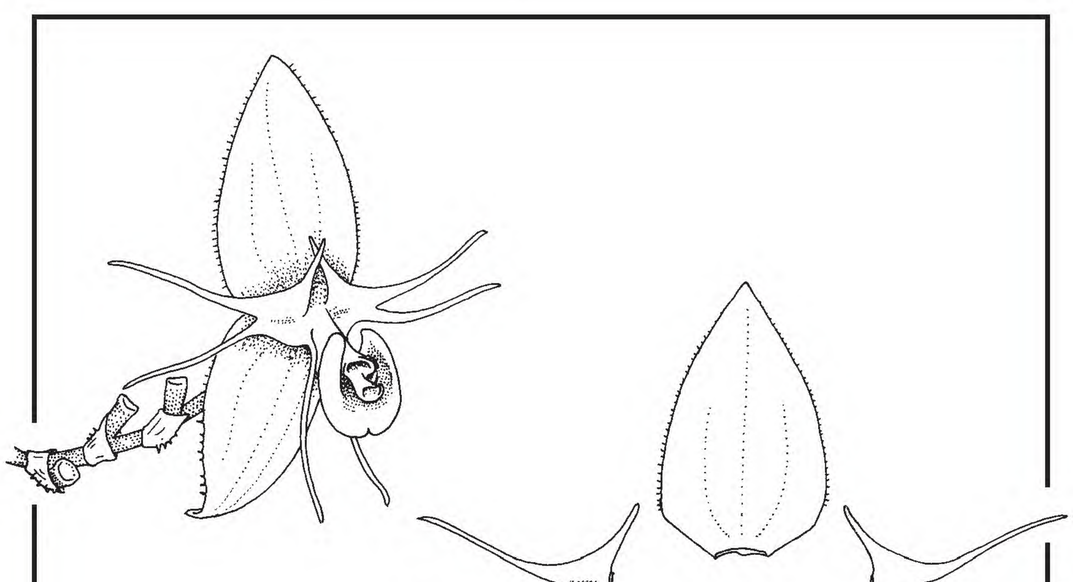



Fig. 201. Lepanthes octopus

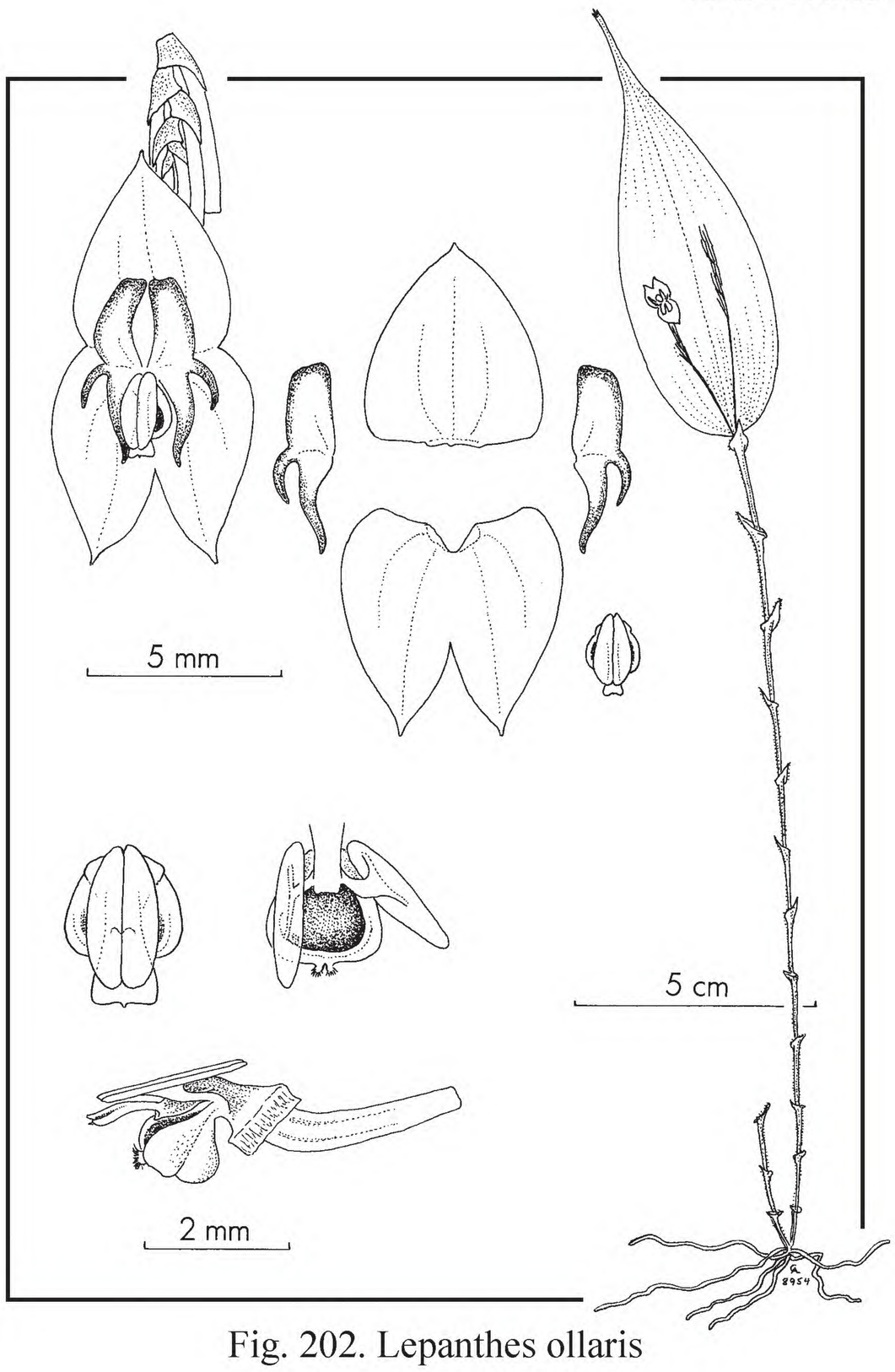



Fig. 202. Lepanthes ollaris

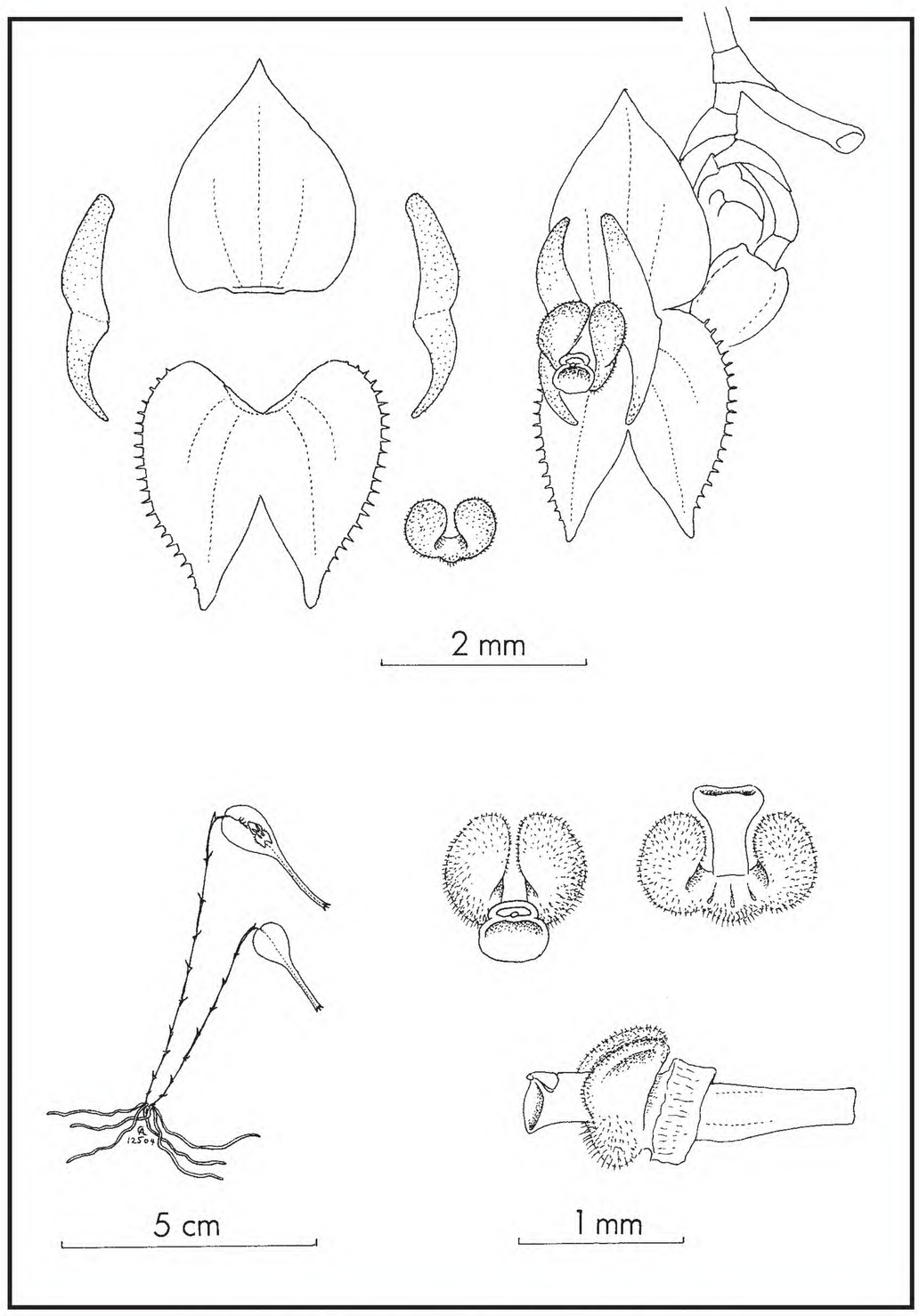



Fig. 203. Lepanthes opetidion

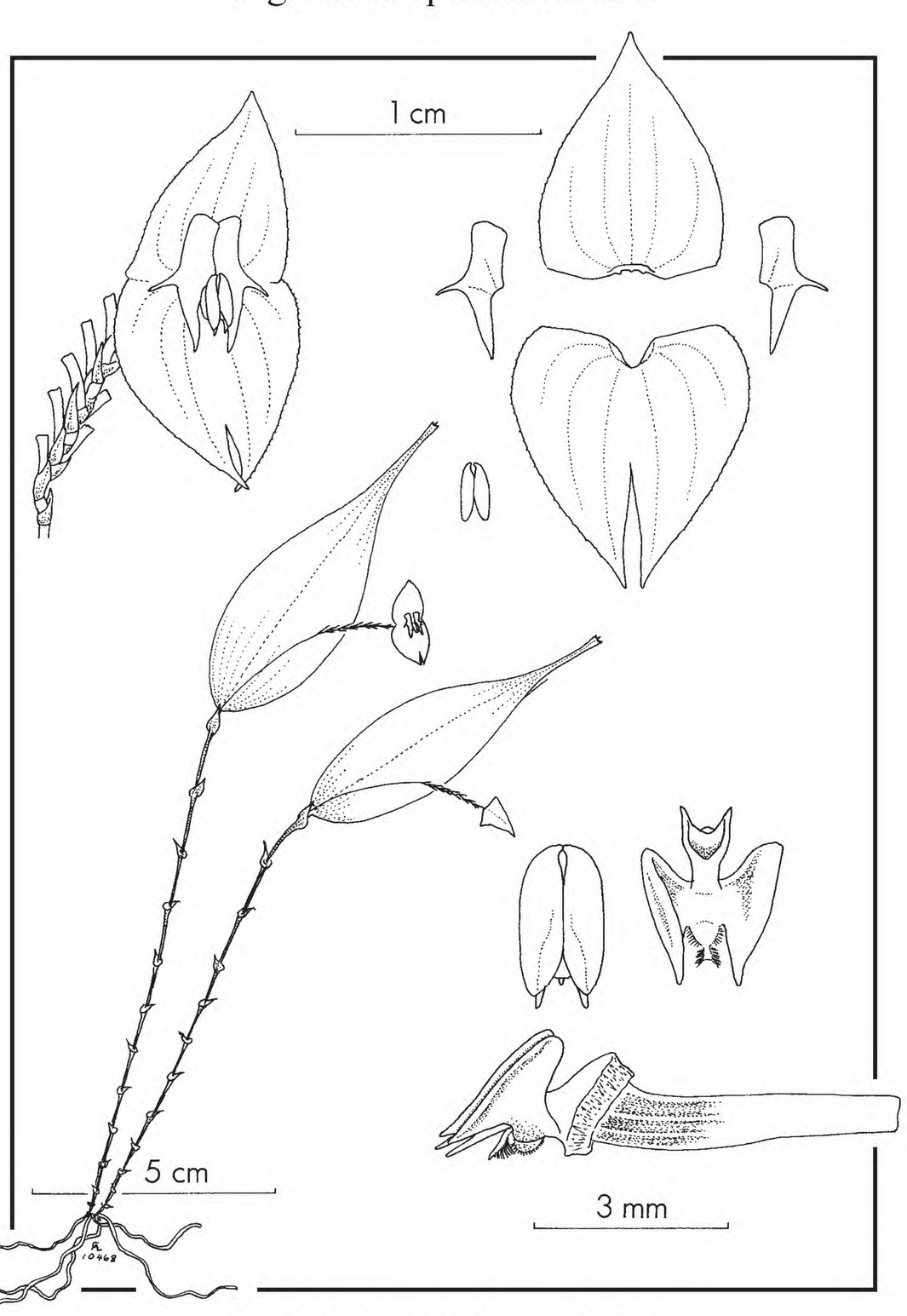



Fig. 204. Lepanthes ophelma

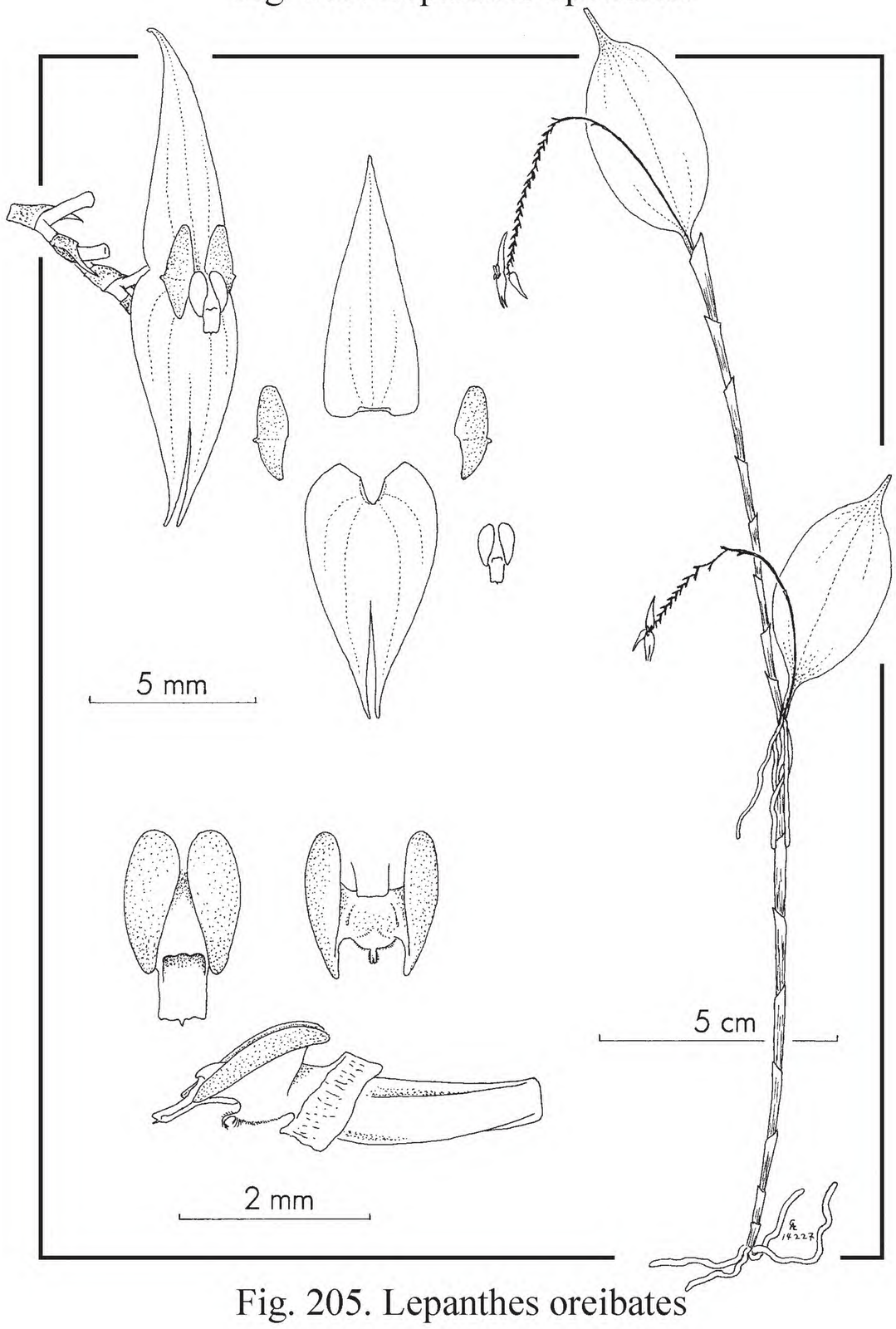



Fig. 205. Lepanthes oreibates

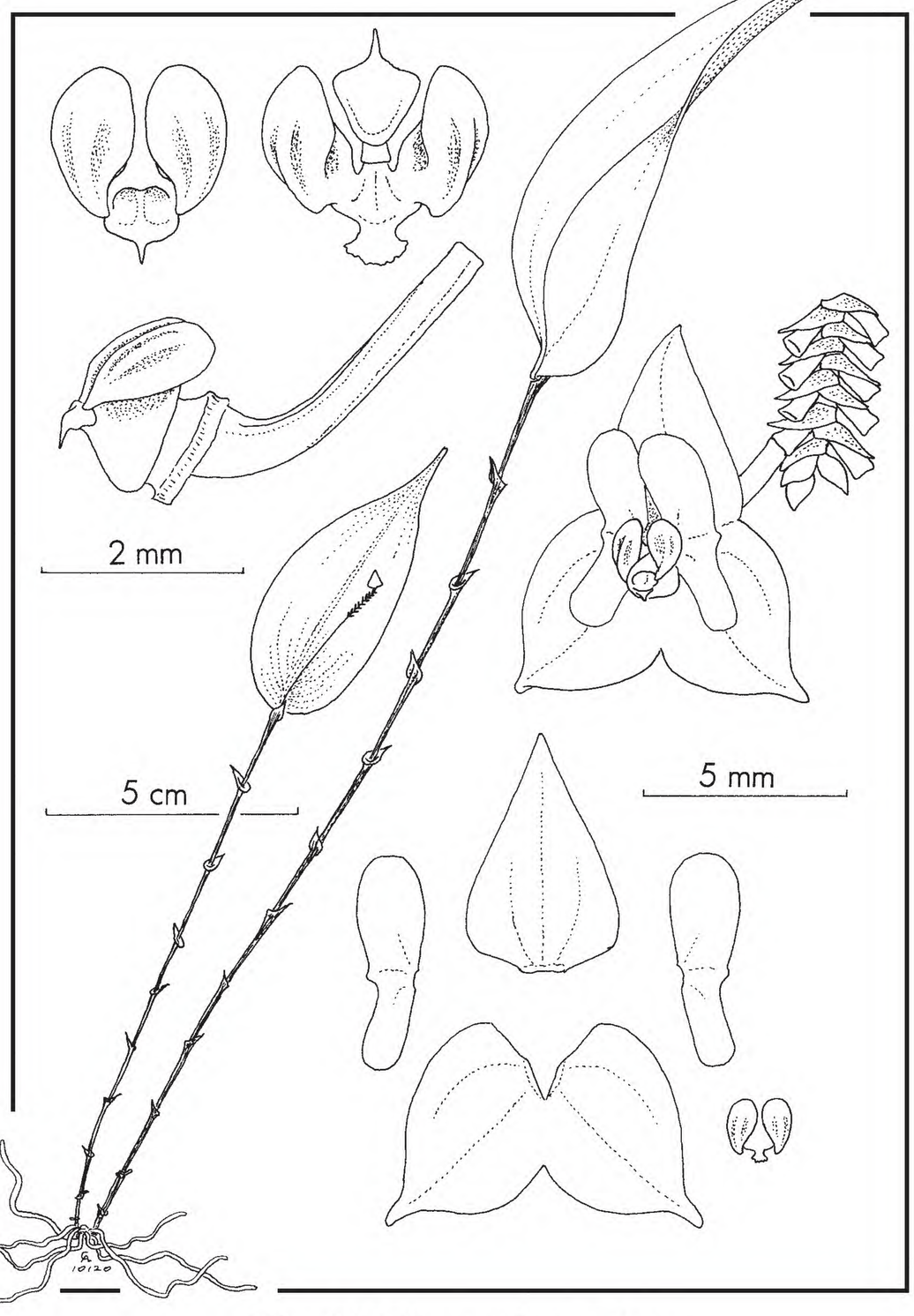



Fig. 206. Lepanthes orion

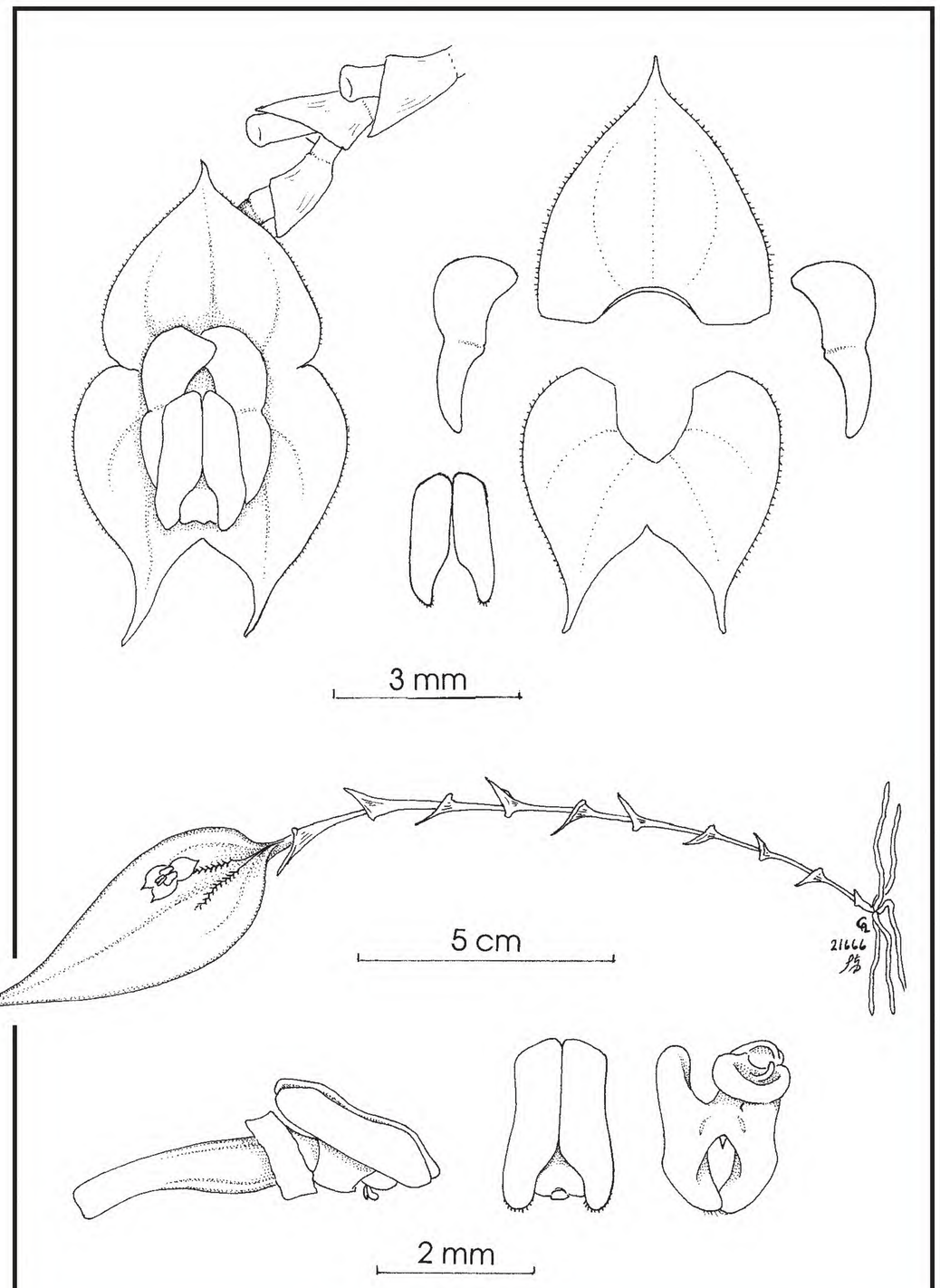



Fig. 207. Lepanthes ortiziana

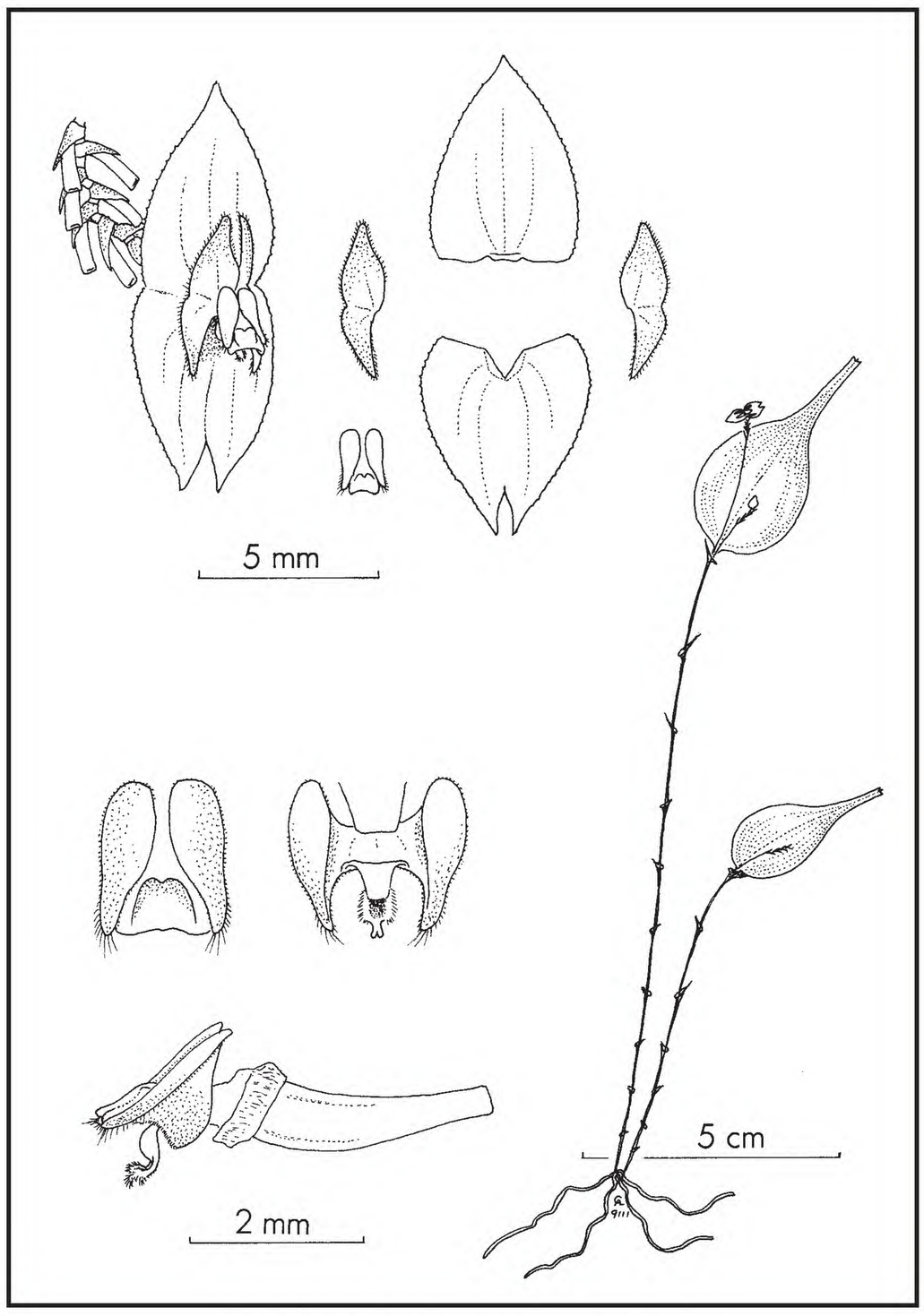



Fig. 208. Lepanthes oscillifera

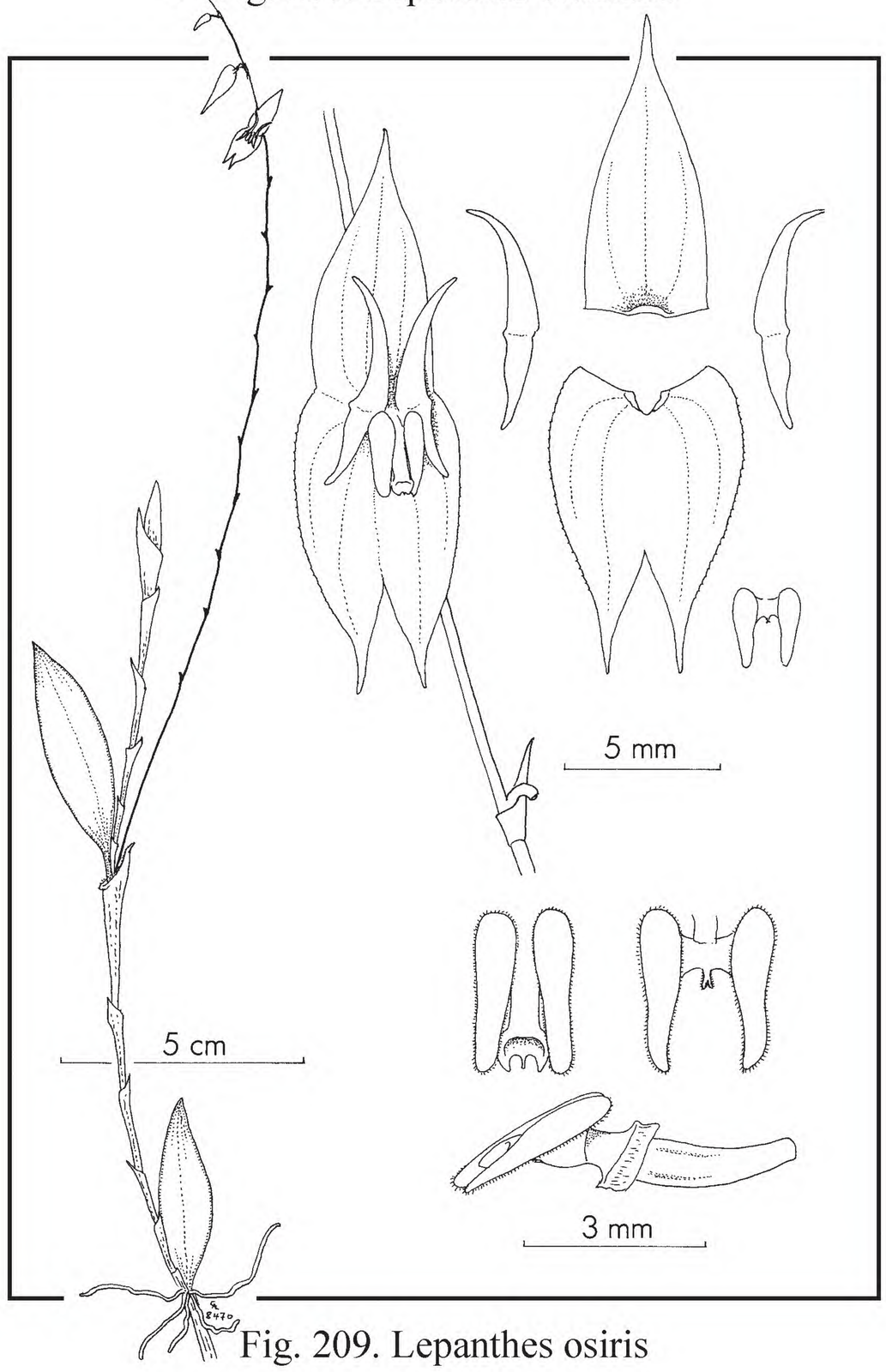



Fig. 209. Lepanthes osiris

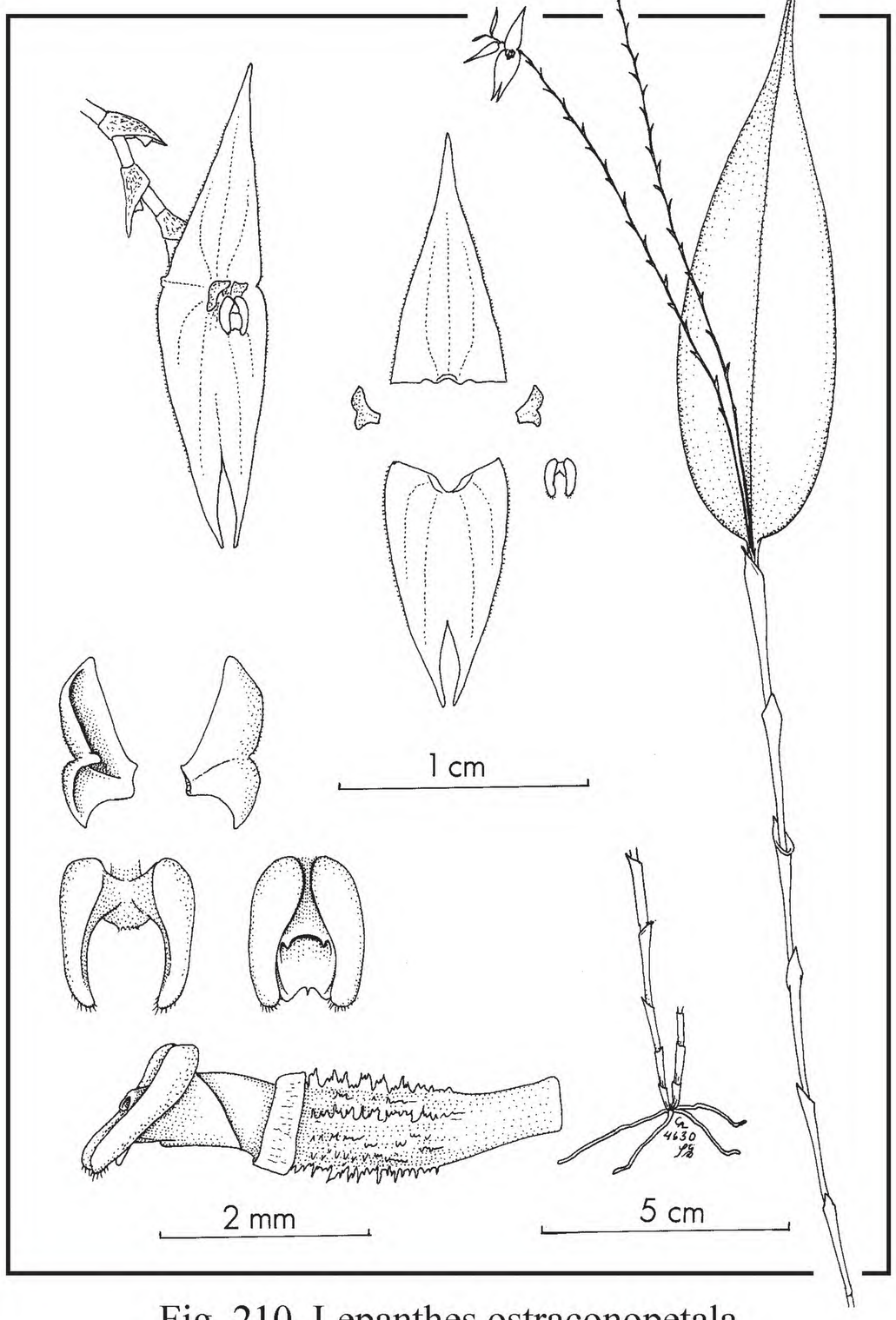



Fig. 210. Lepanthes ostraconopetala

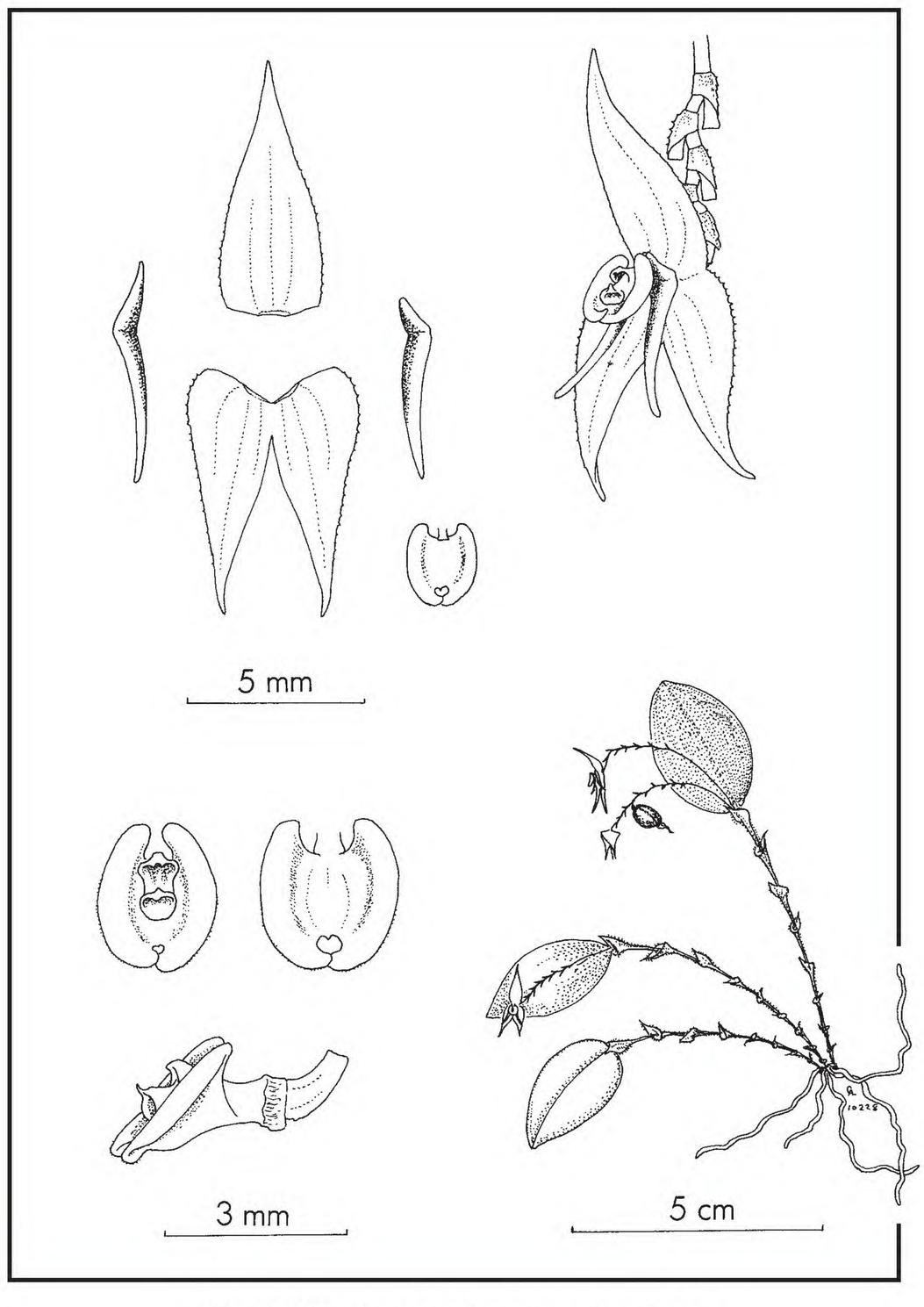



Fig. 211. Lepanthes oxybaphon

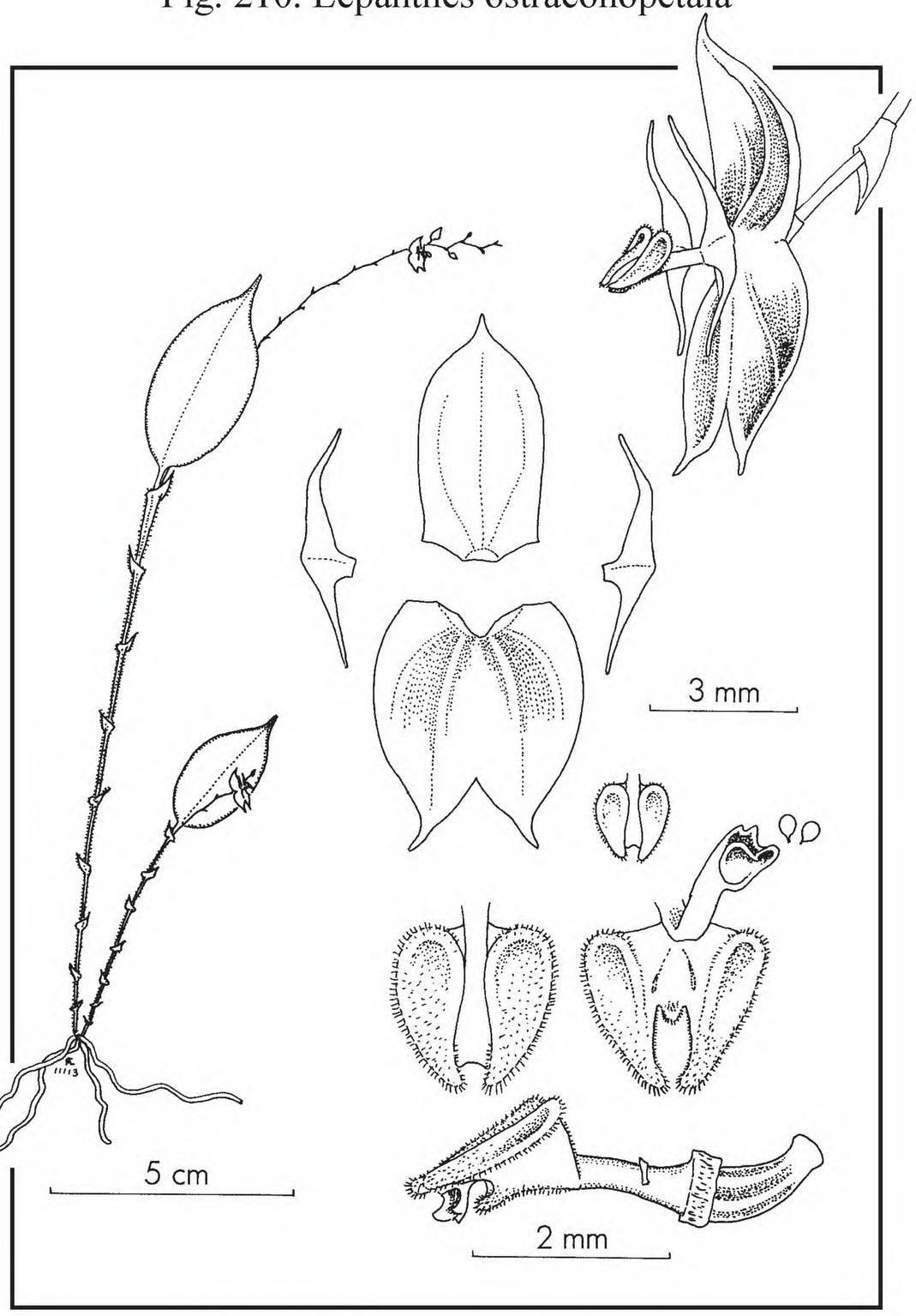



Fig. 212. Lepanthes oxypetala

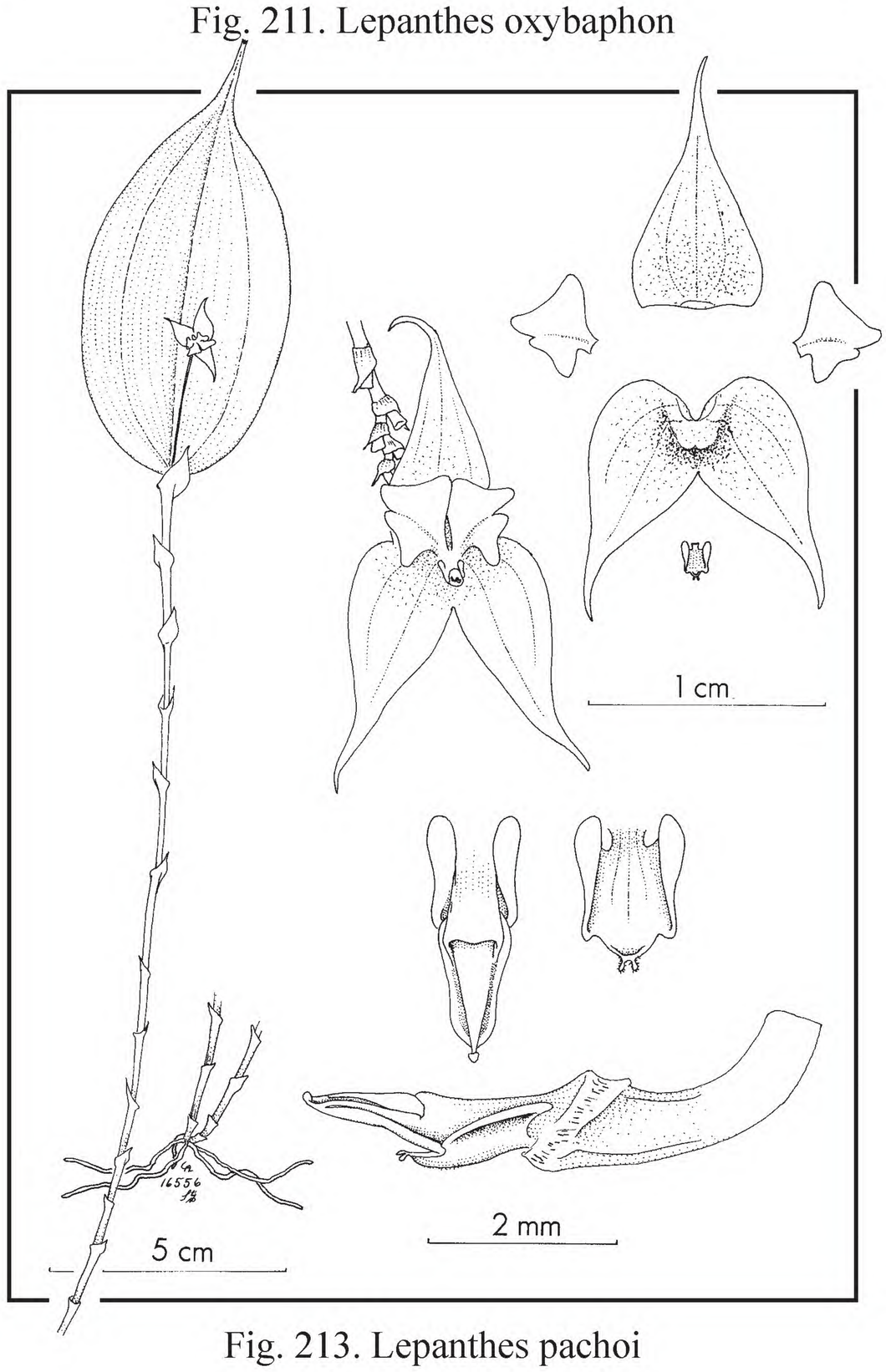



Fig. 213. Lepanthes pachoi

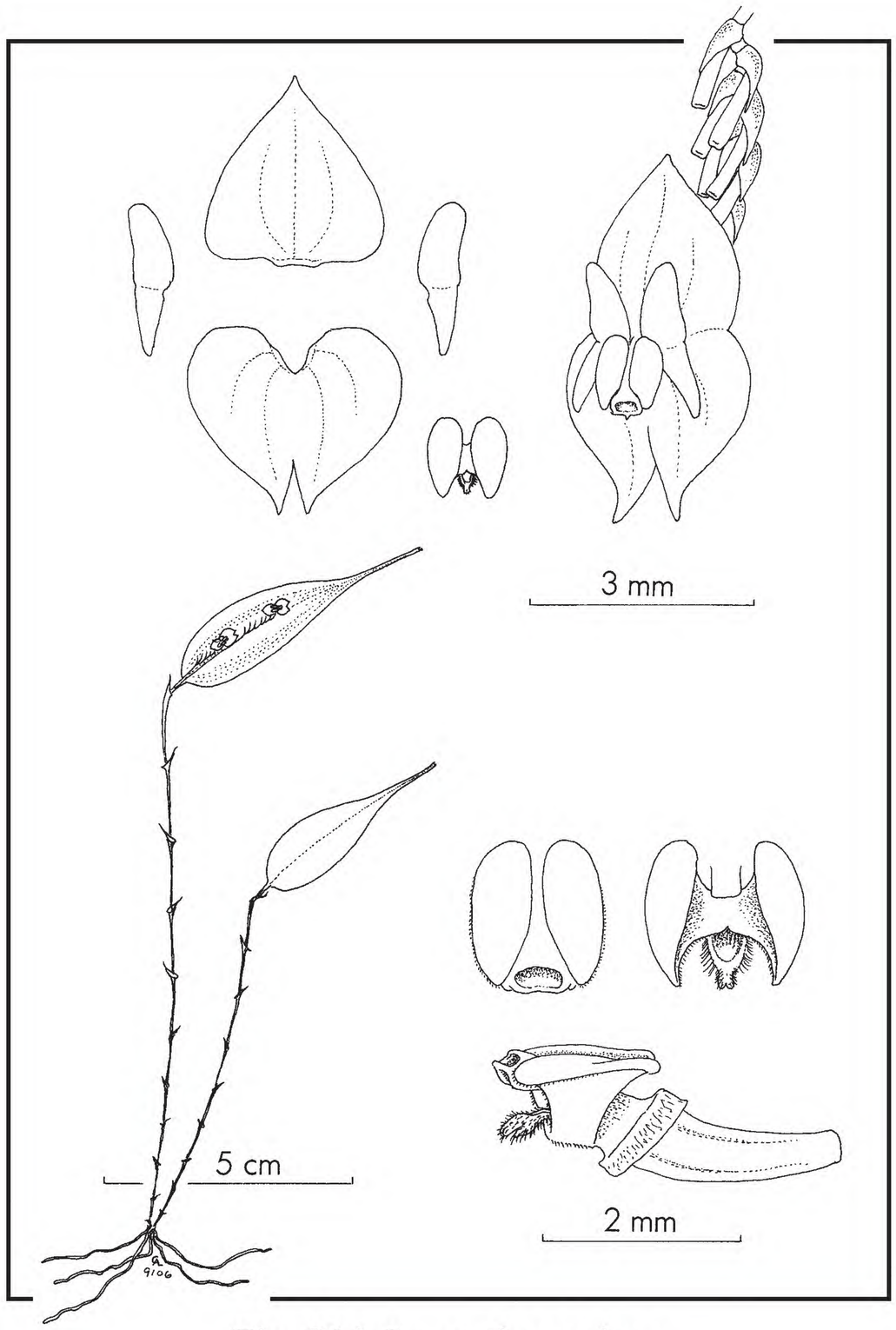



Fig. 214. Lepanthes palaga

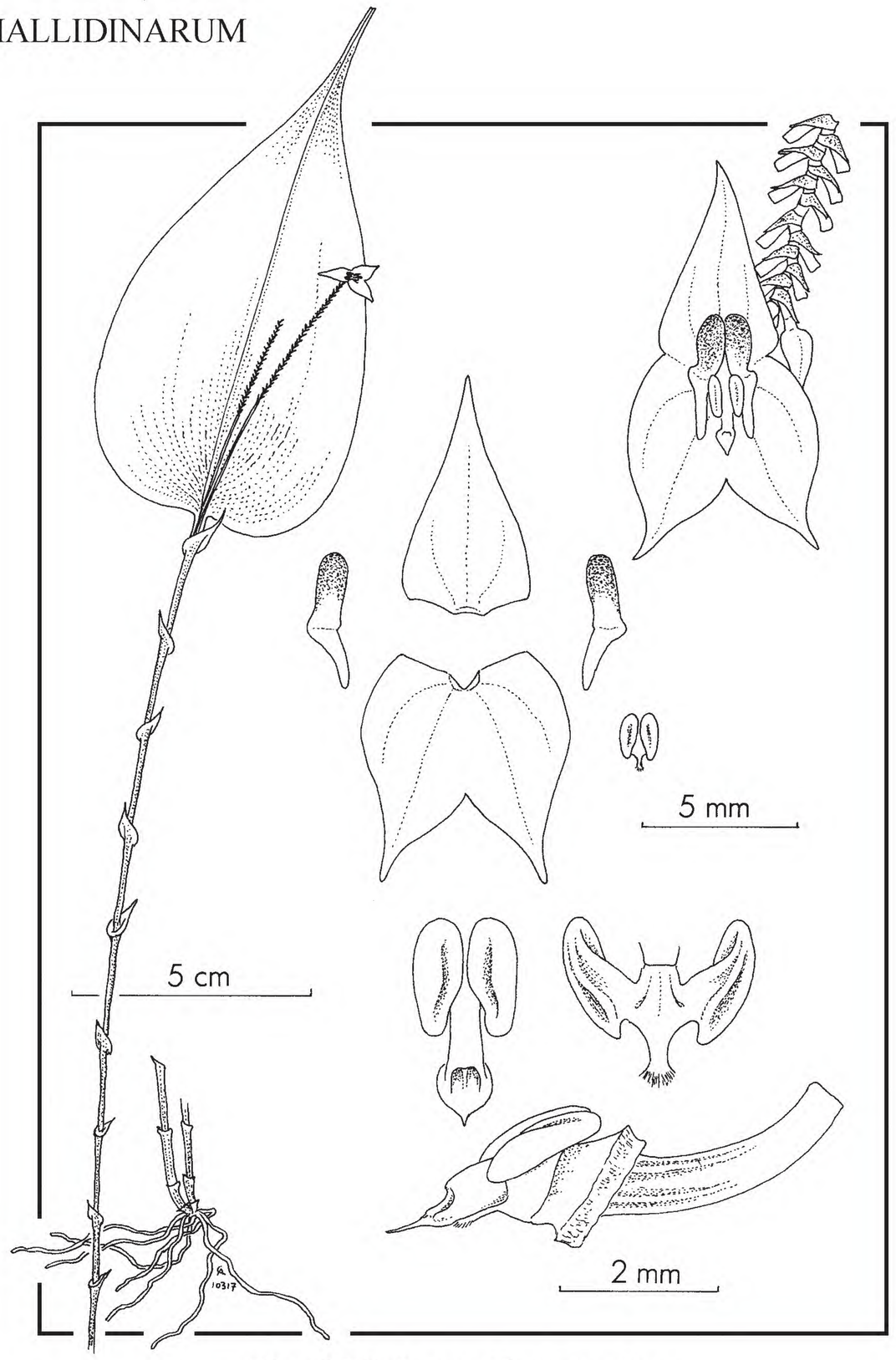



Fig. 215. Lepanthes panope

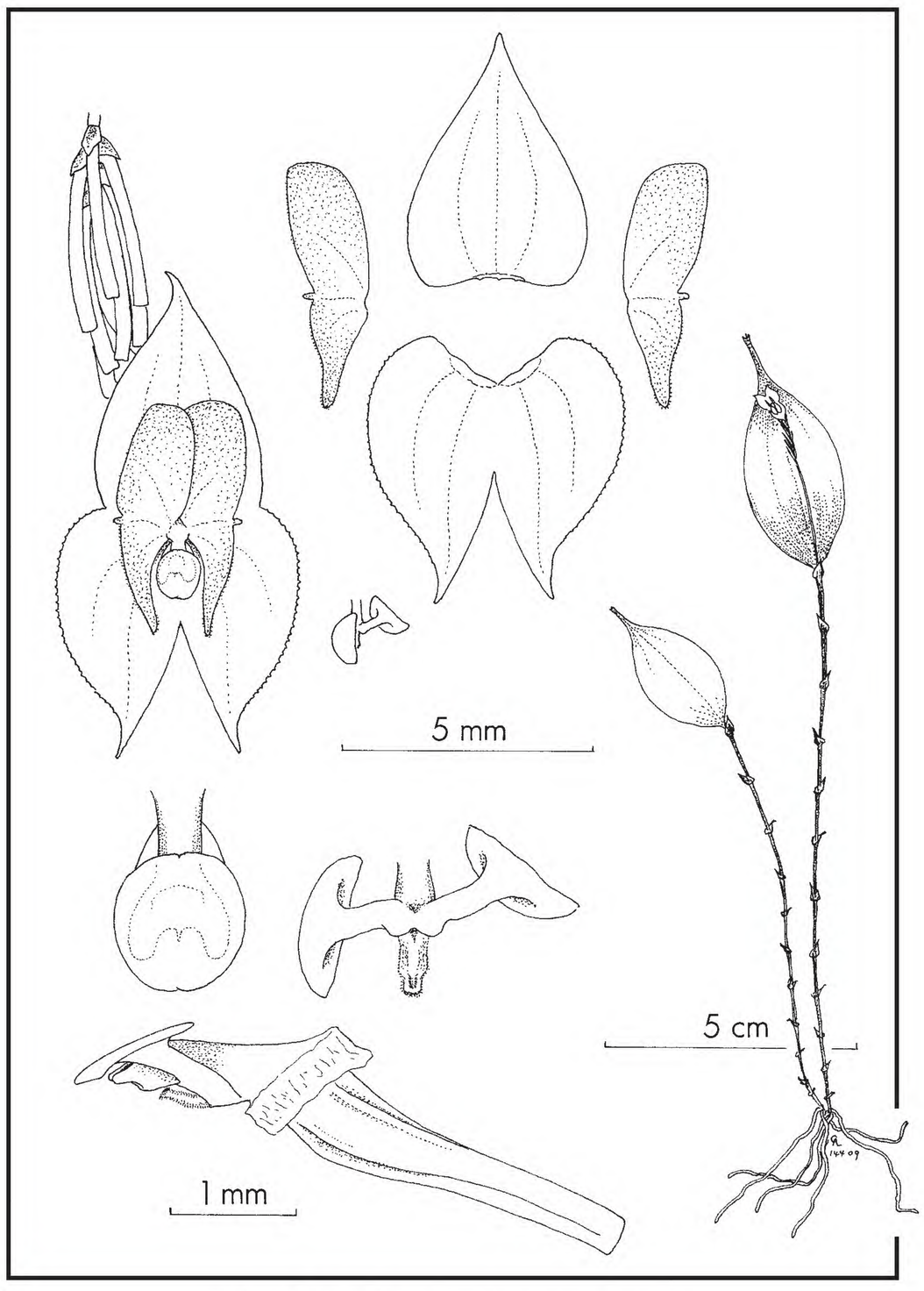



Fig. 216. Lepanthes parmata

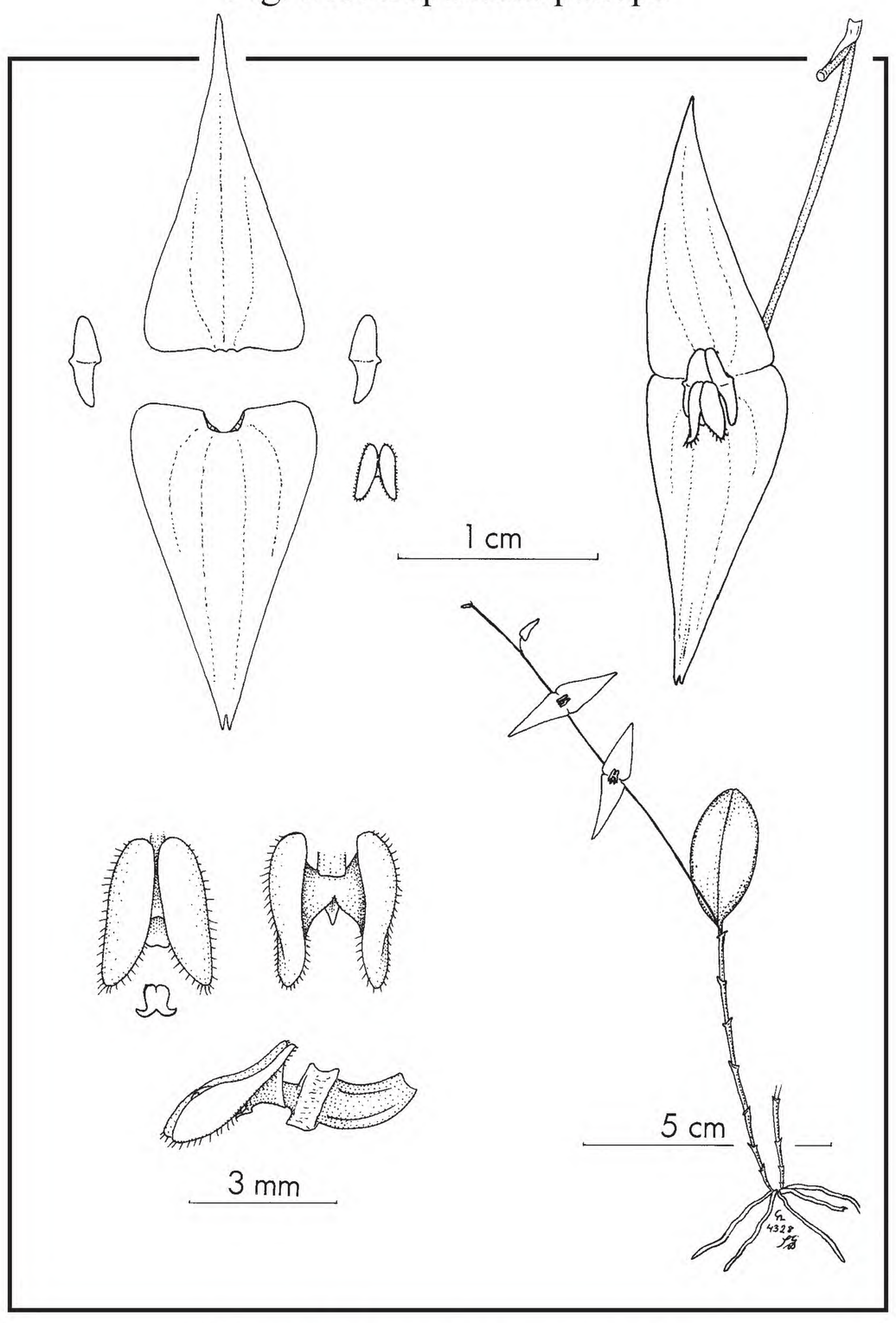



Fig. 217. Lepanthes pastoënsis

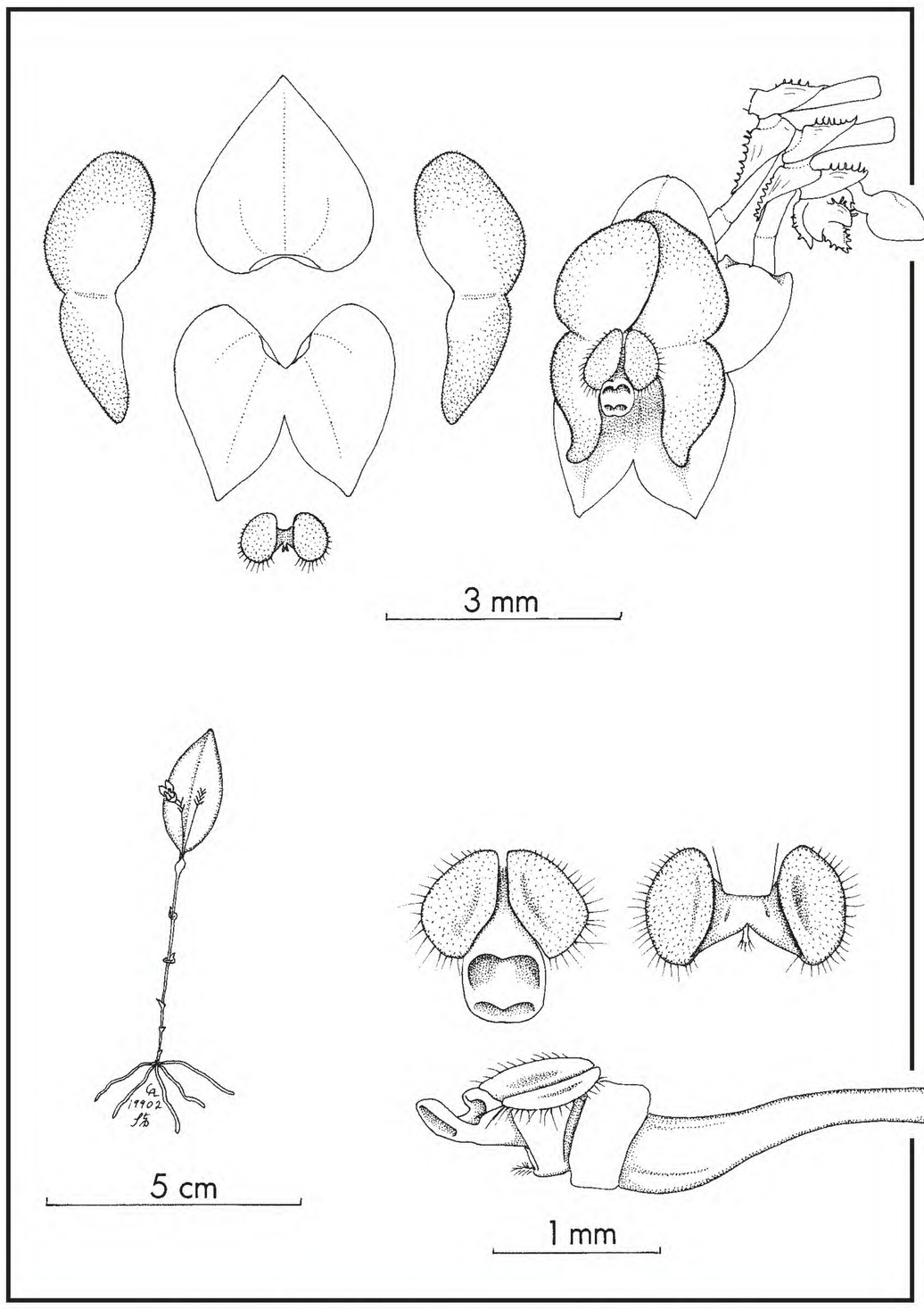



Fig. 218. Lepanthes penicillifera

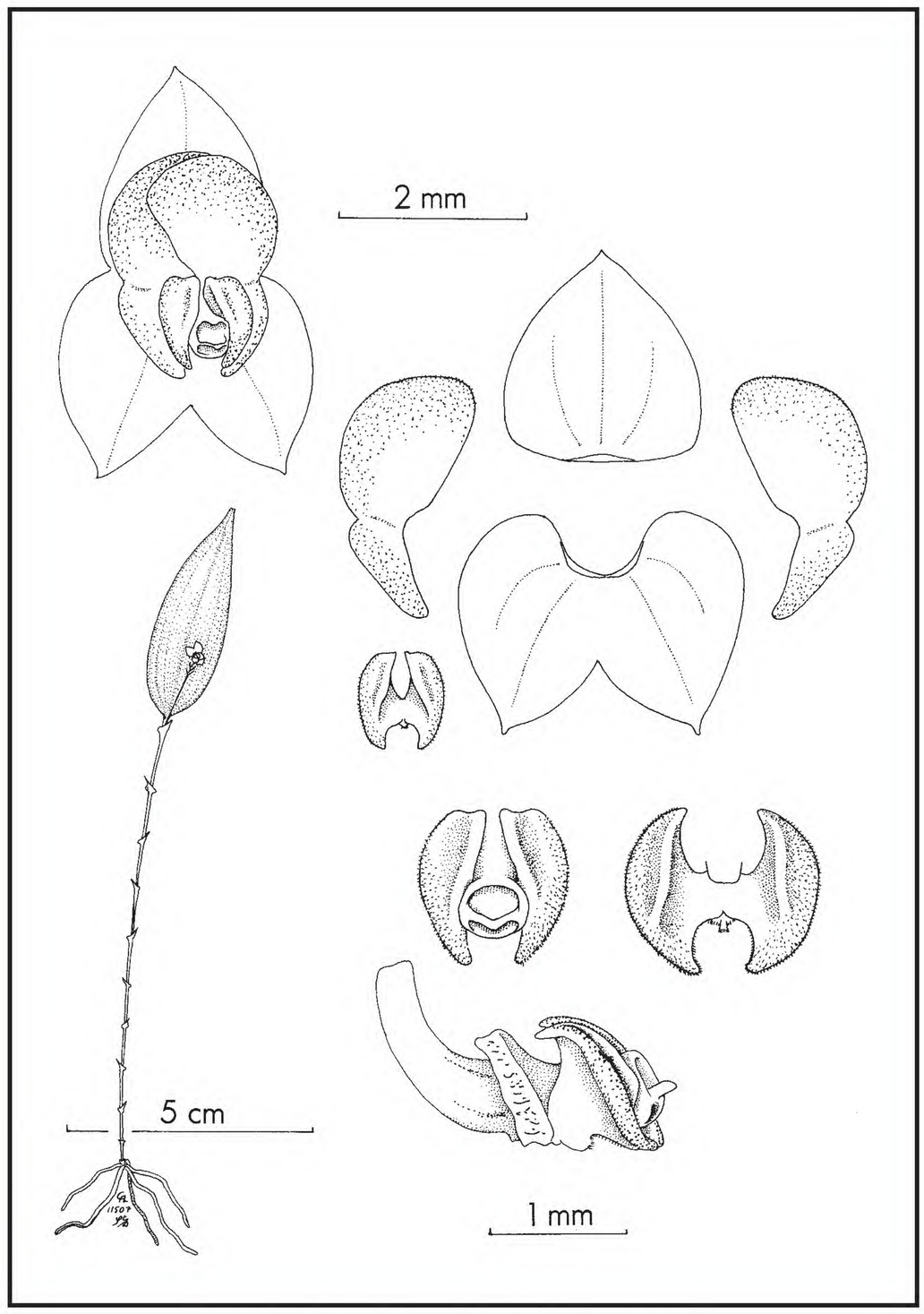



Fig. 219. Lepanthes perdita

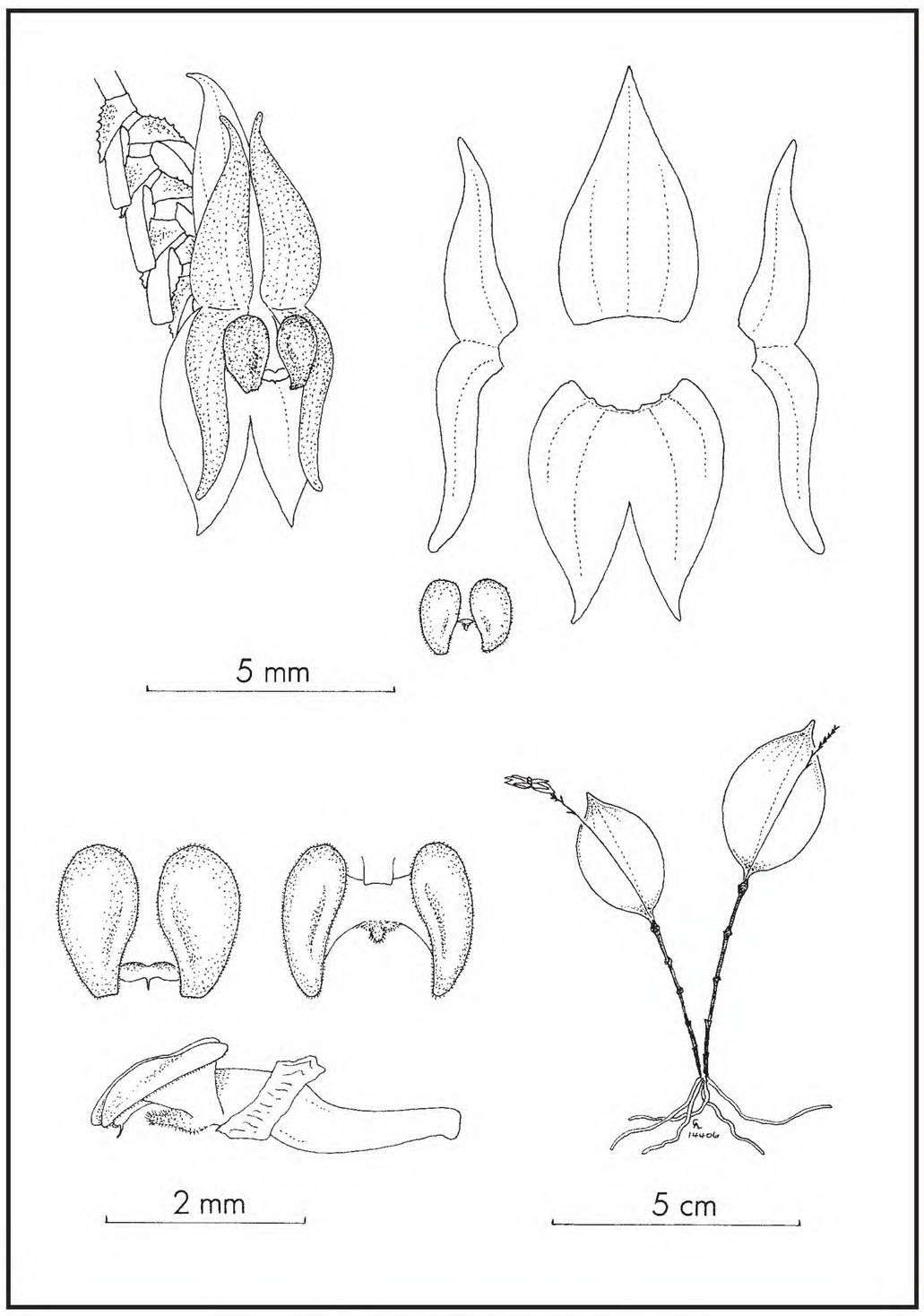



Fig. 220. Lepanthes petalolenta

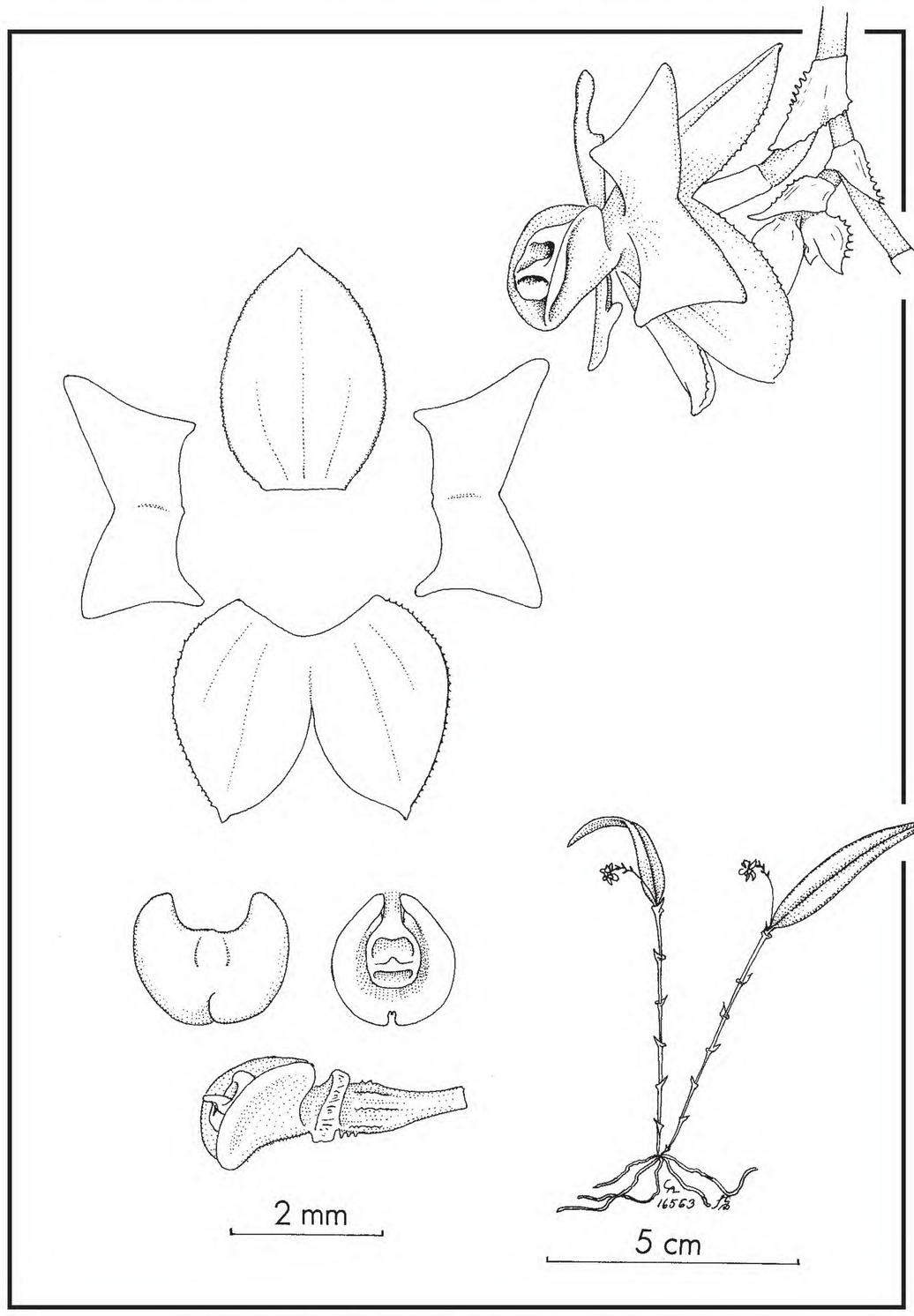



Fig. 221. Lepanthes petalopteryx

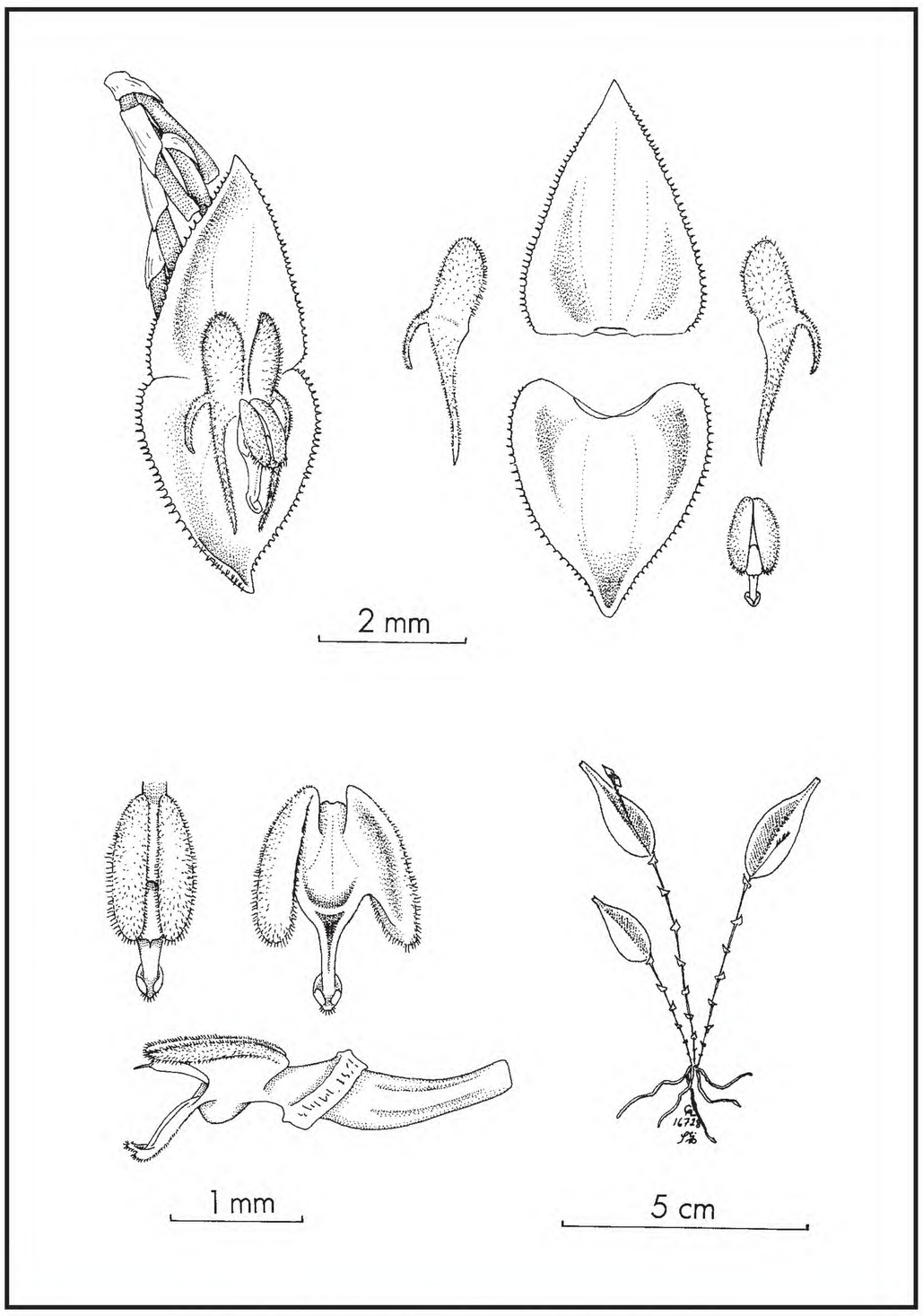



Fig. 222. Lepanthes phalloides

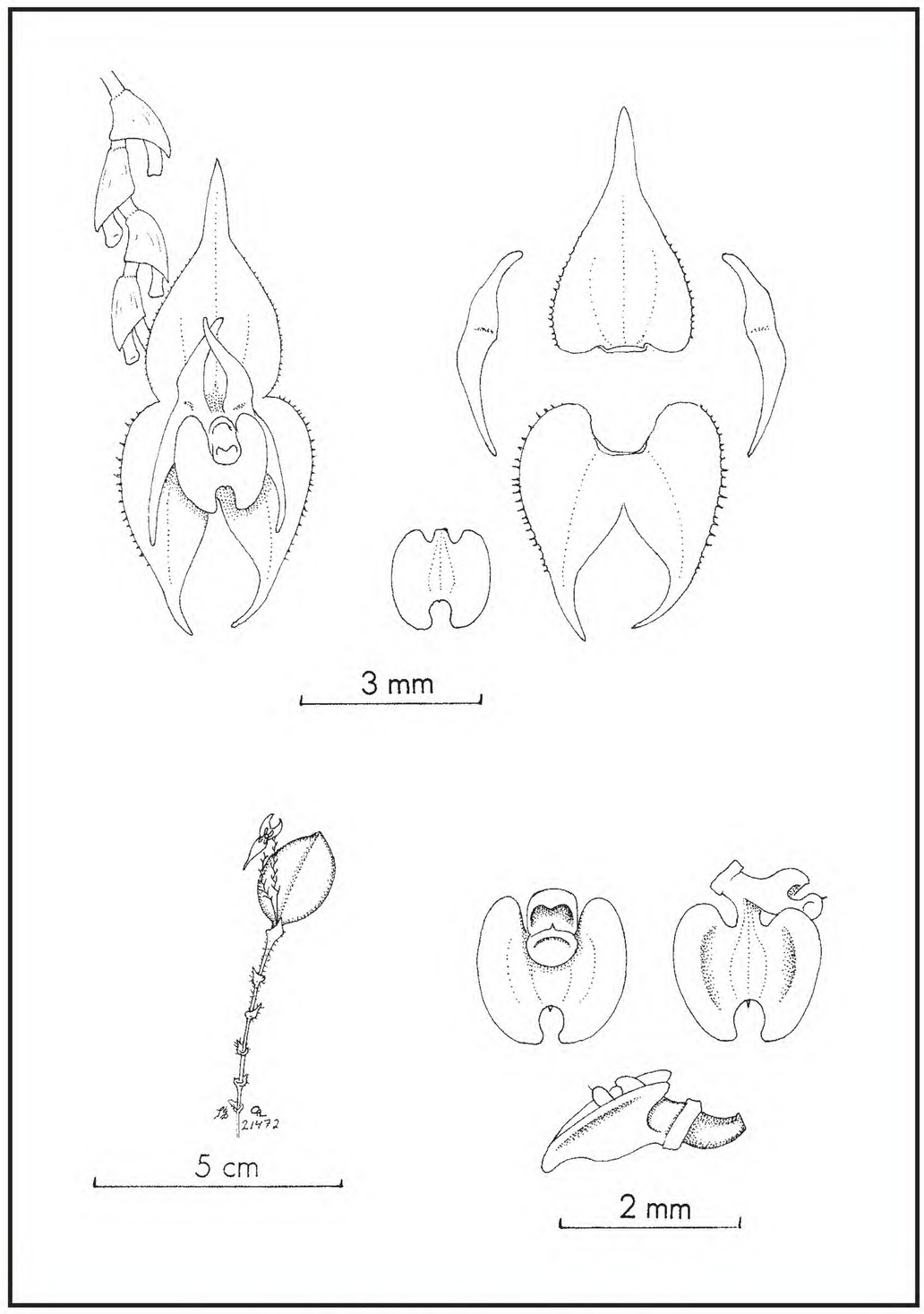



Fig. 223. Lepanthes pictoris

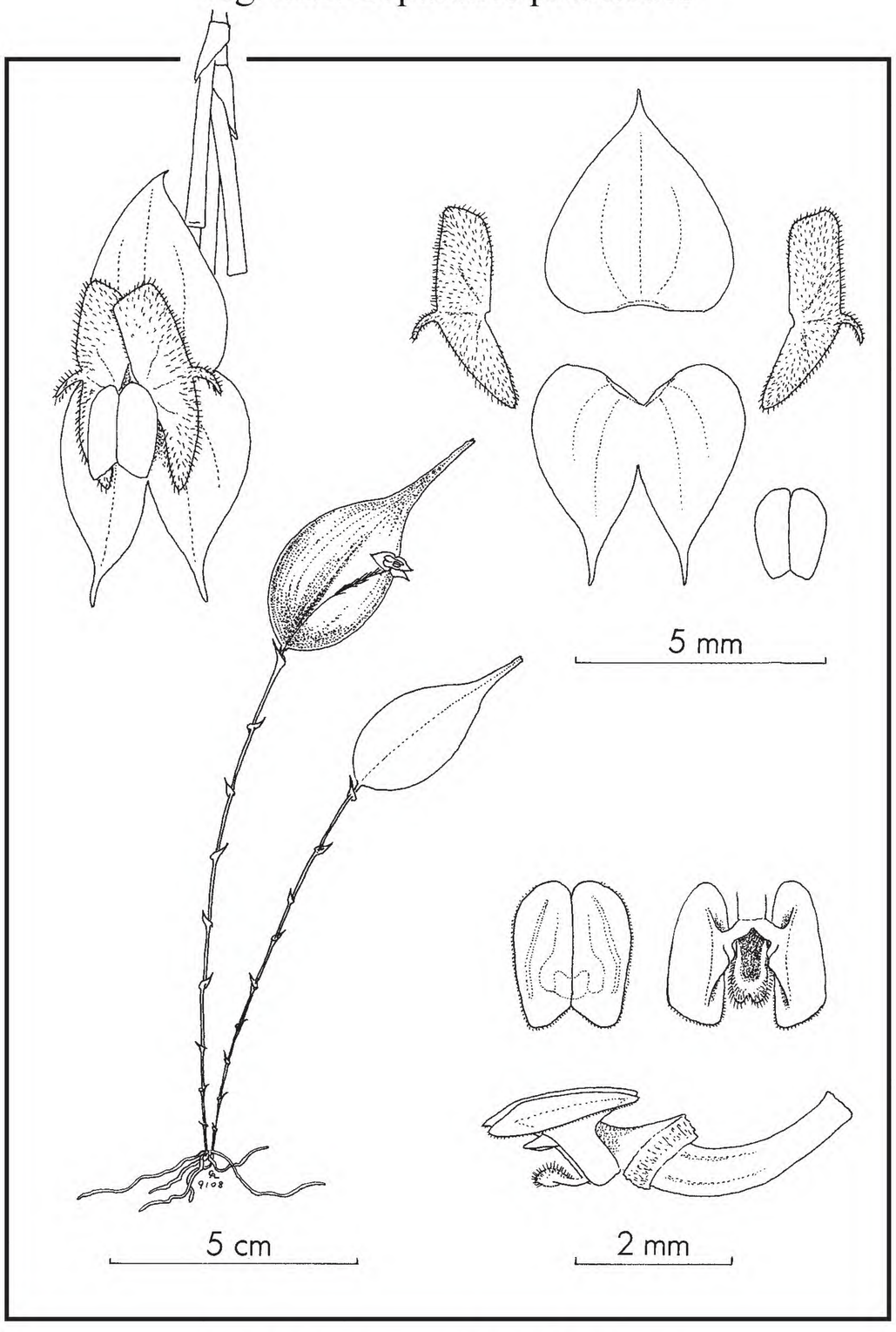



Fig. 224. Lepanthes pilosiaures

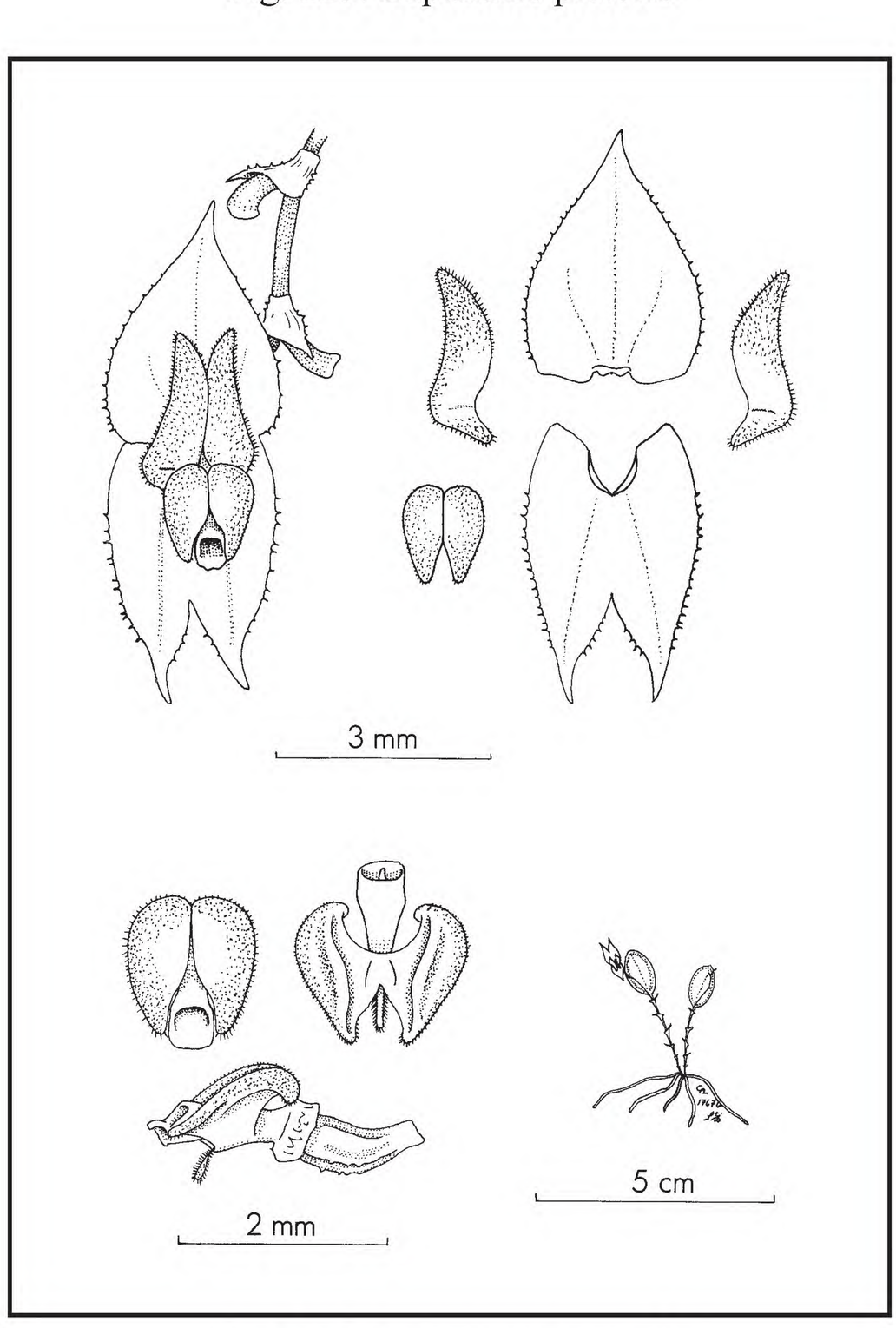



Fig. 225. Lepanthes pinnatula

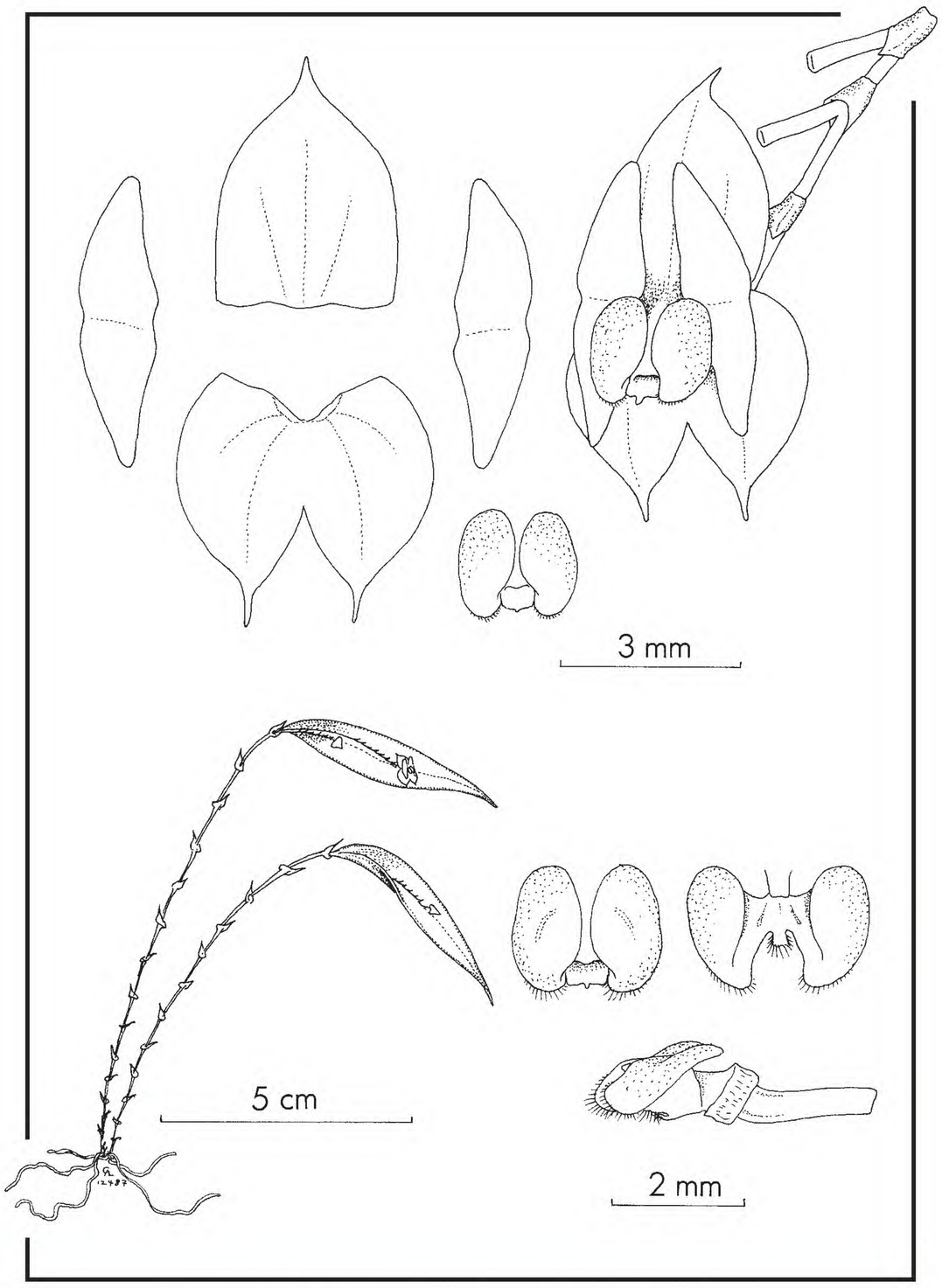



Fig. 226. Lepanthes planadensis

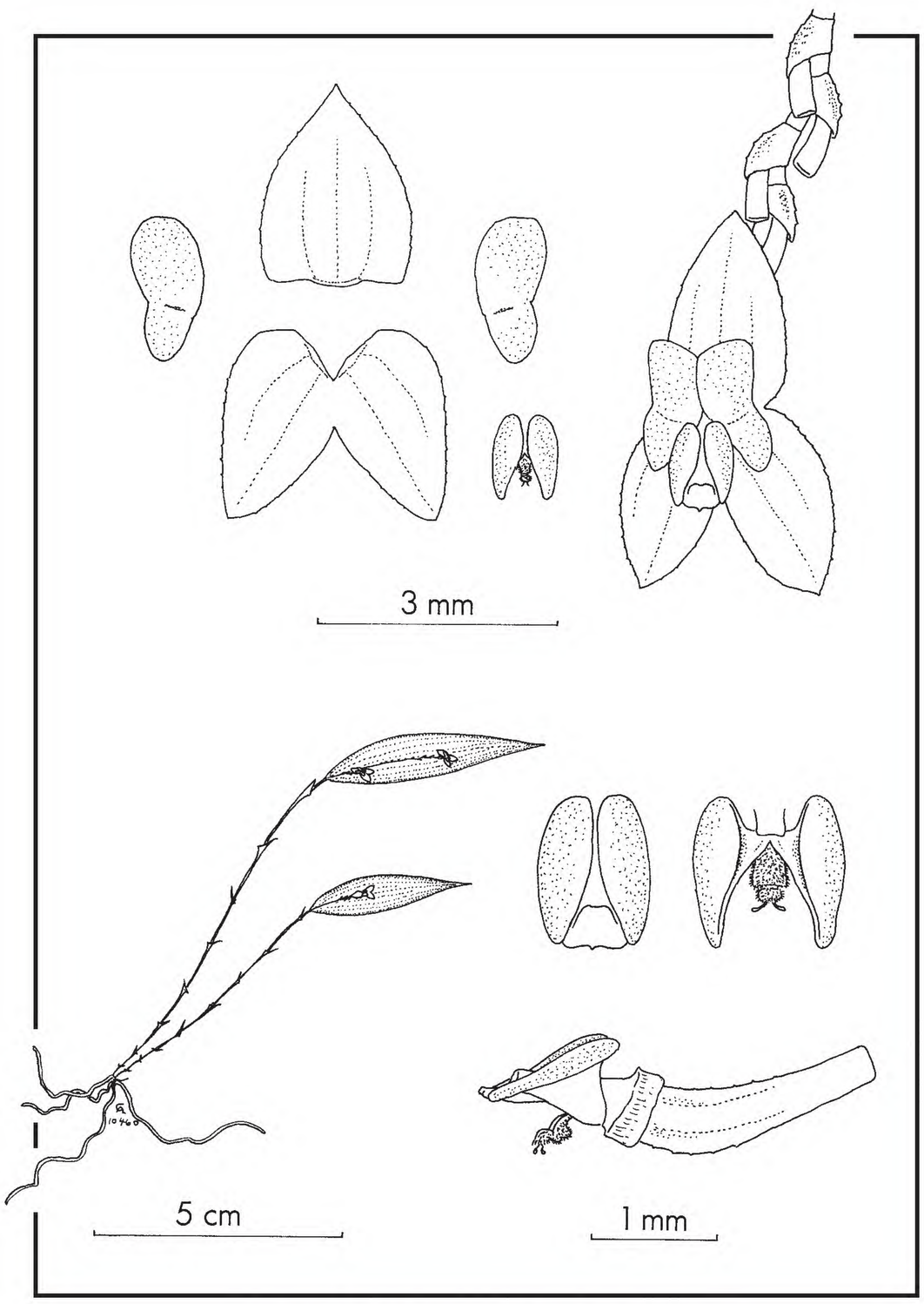



Fig. 227. Lepanthes plectilis

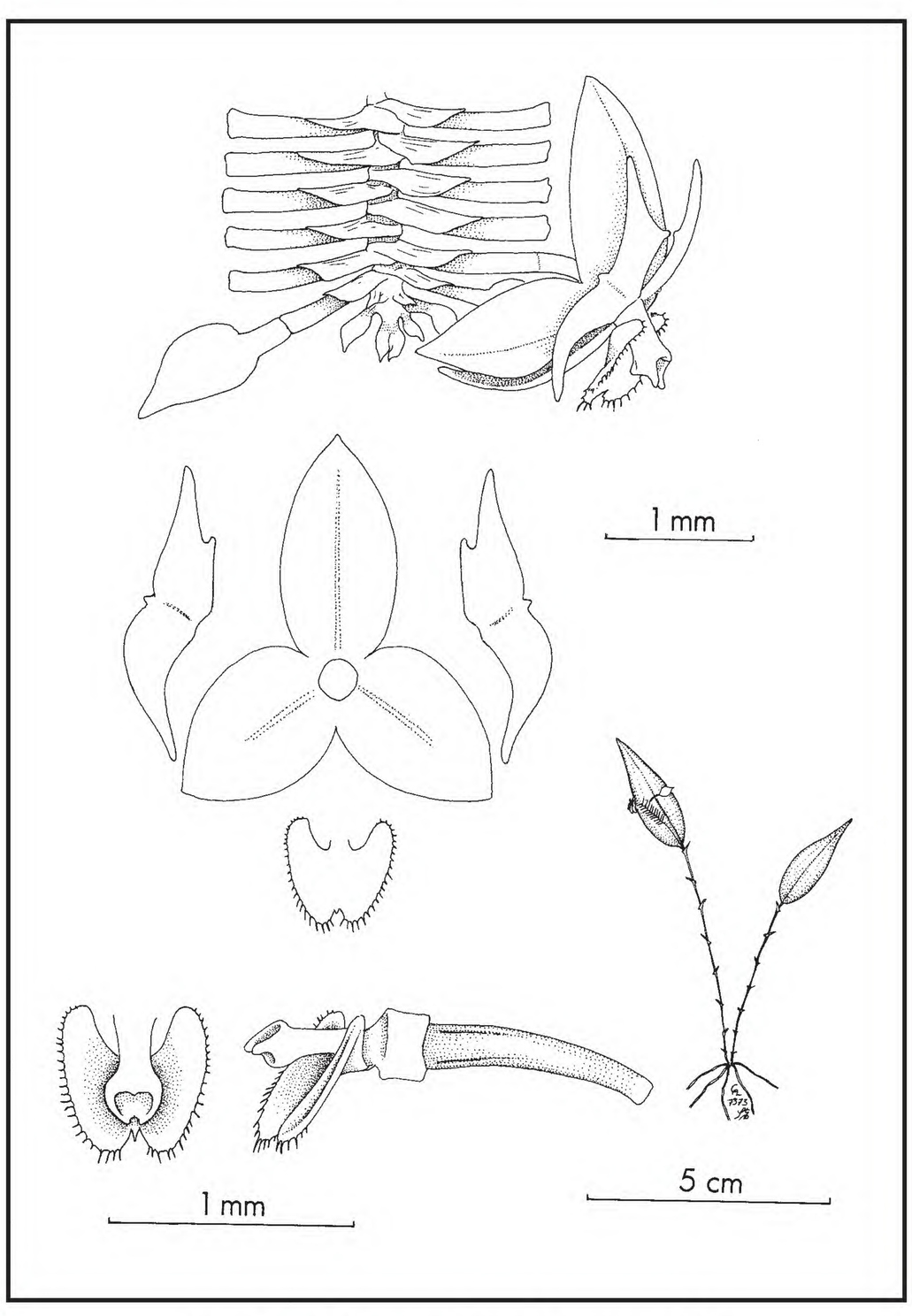



Fig. 228. Lepanthes pleurorachis

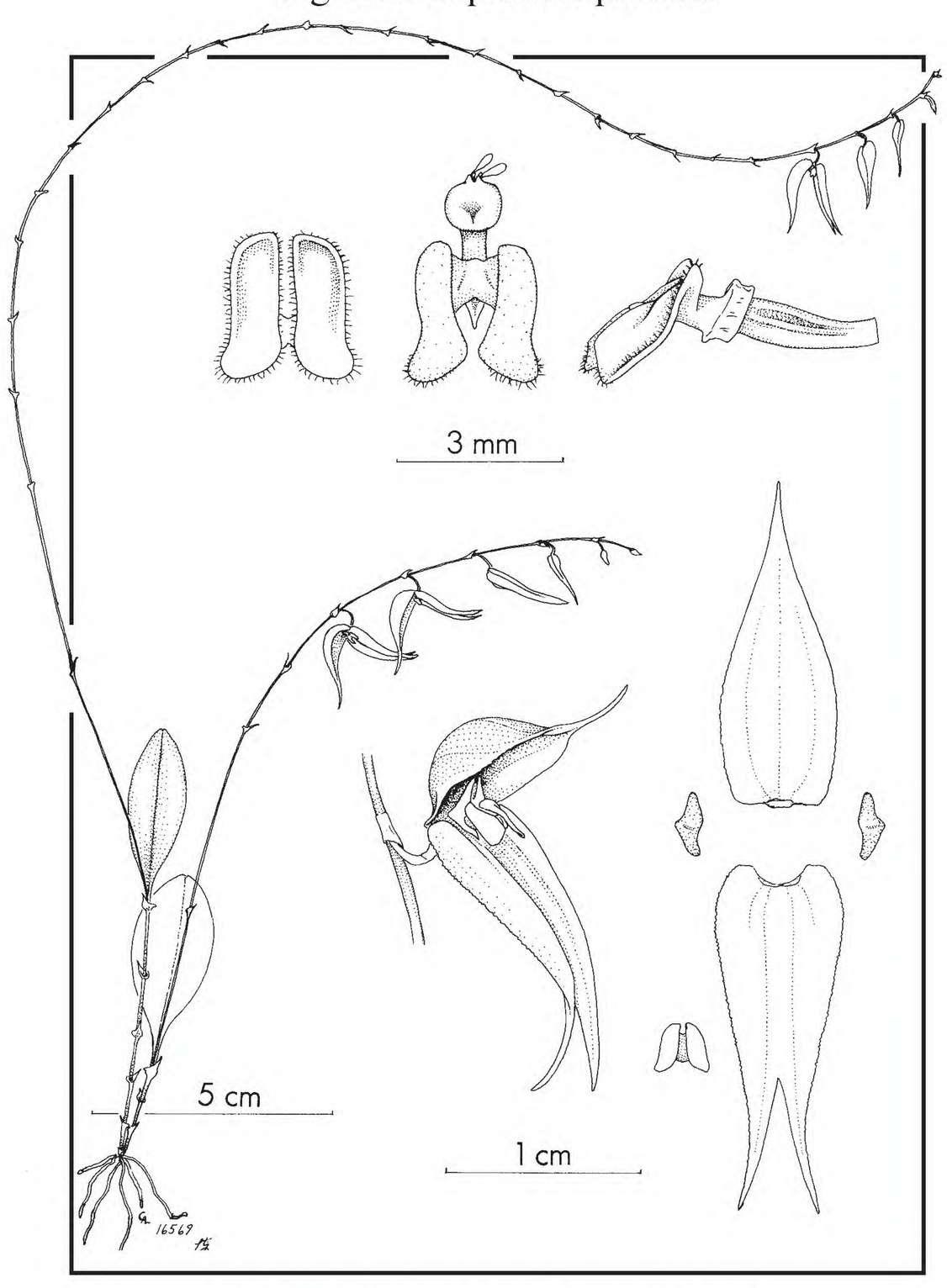



Fig. 229. Lepanthes pleurothallopsis

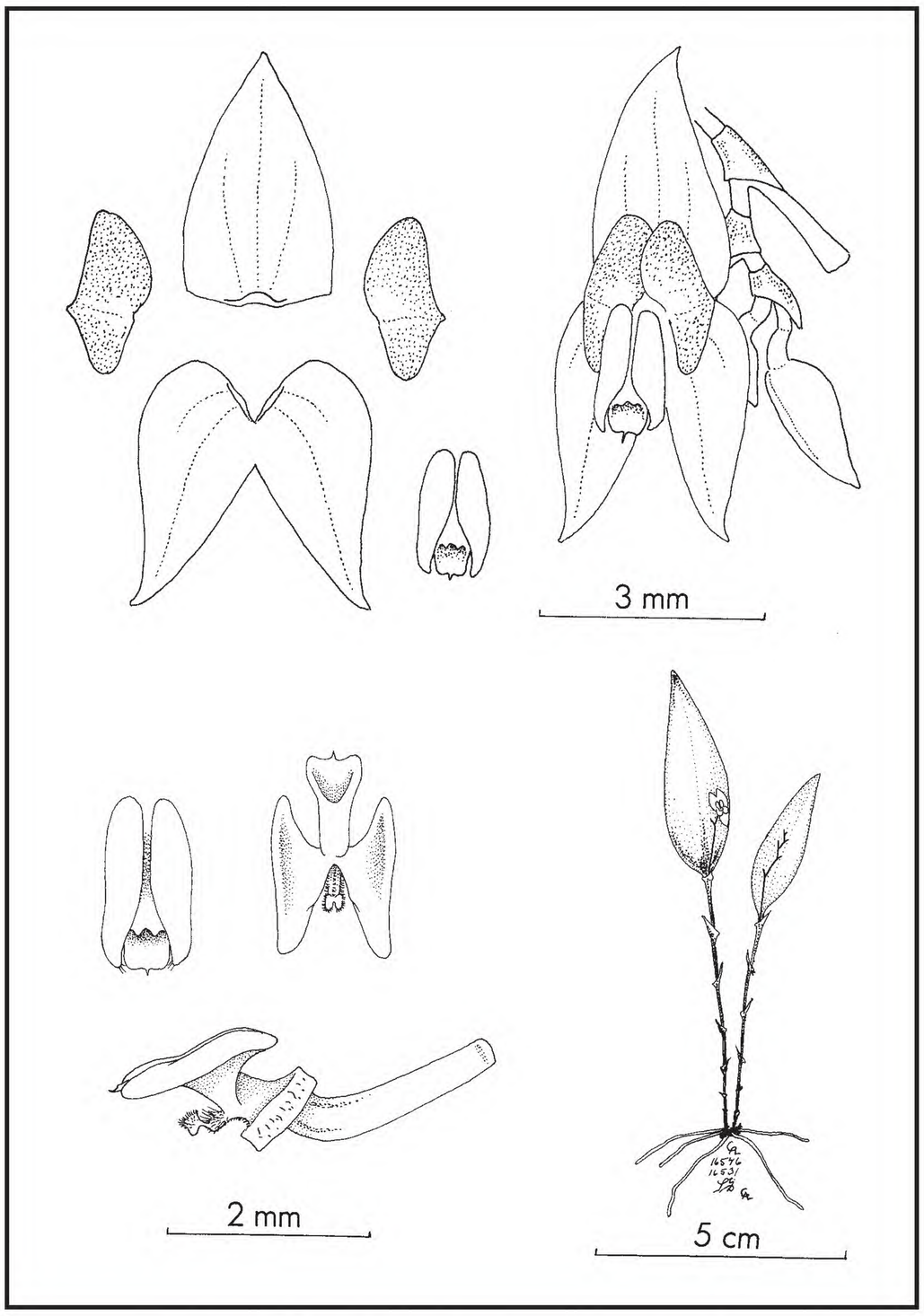



Fig. 230. Lepanthes popayanensis

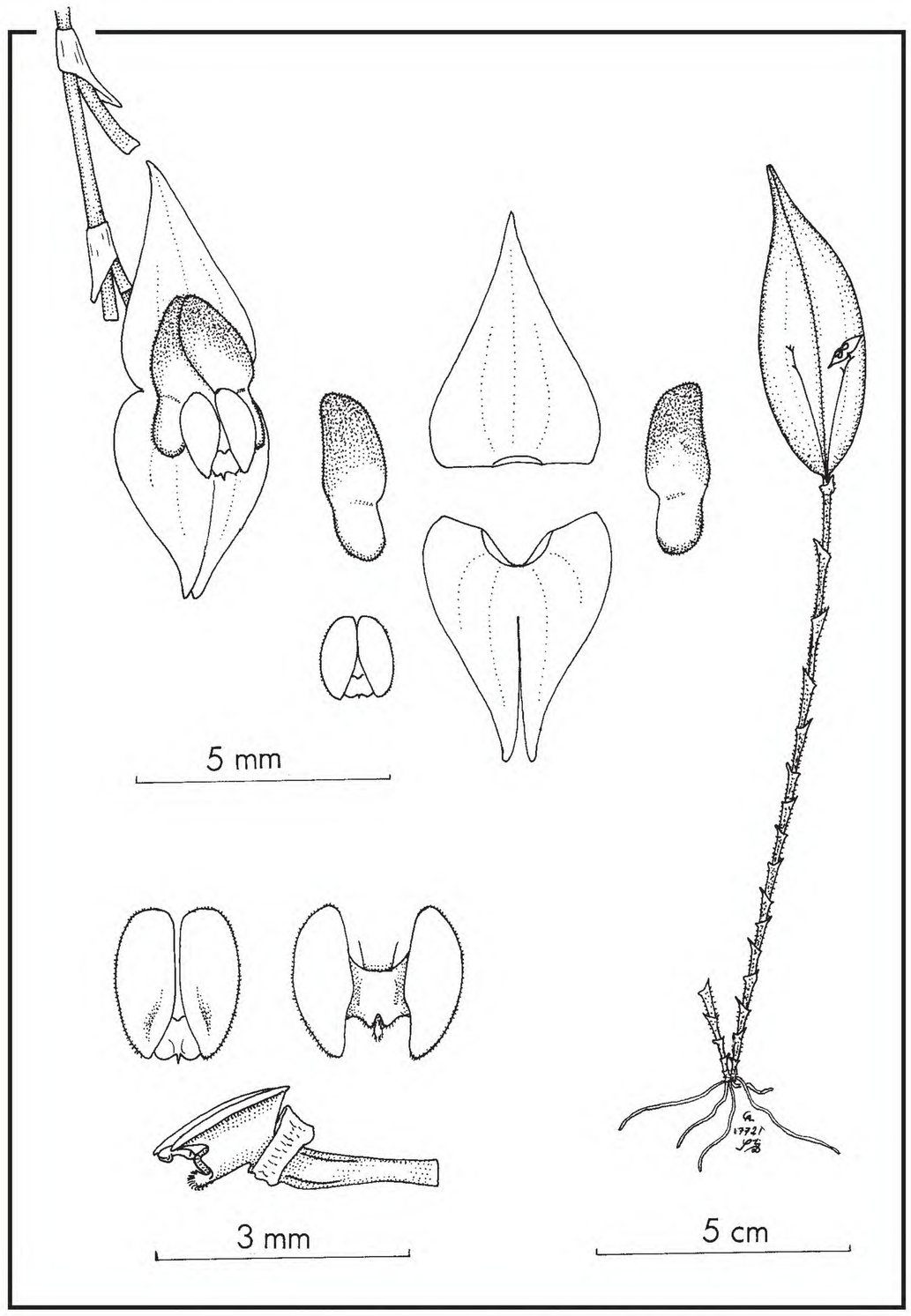



Fig. 231. Lepanthes porracea

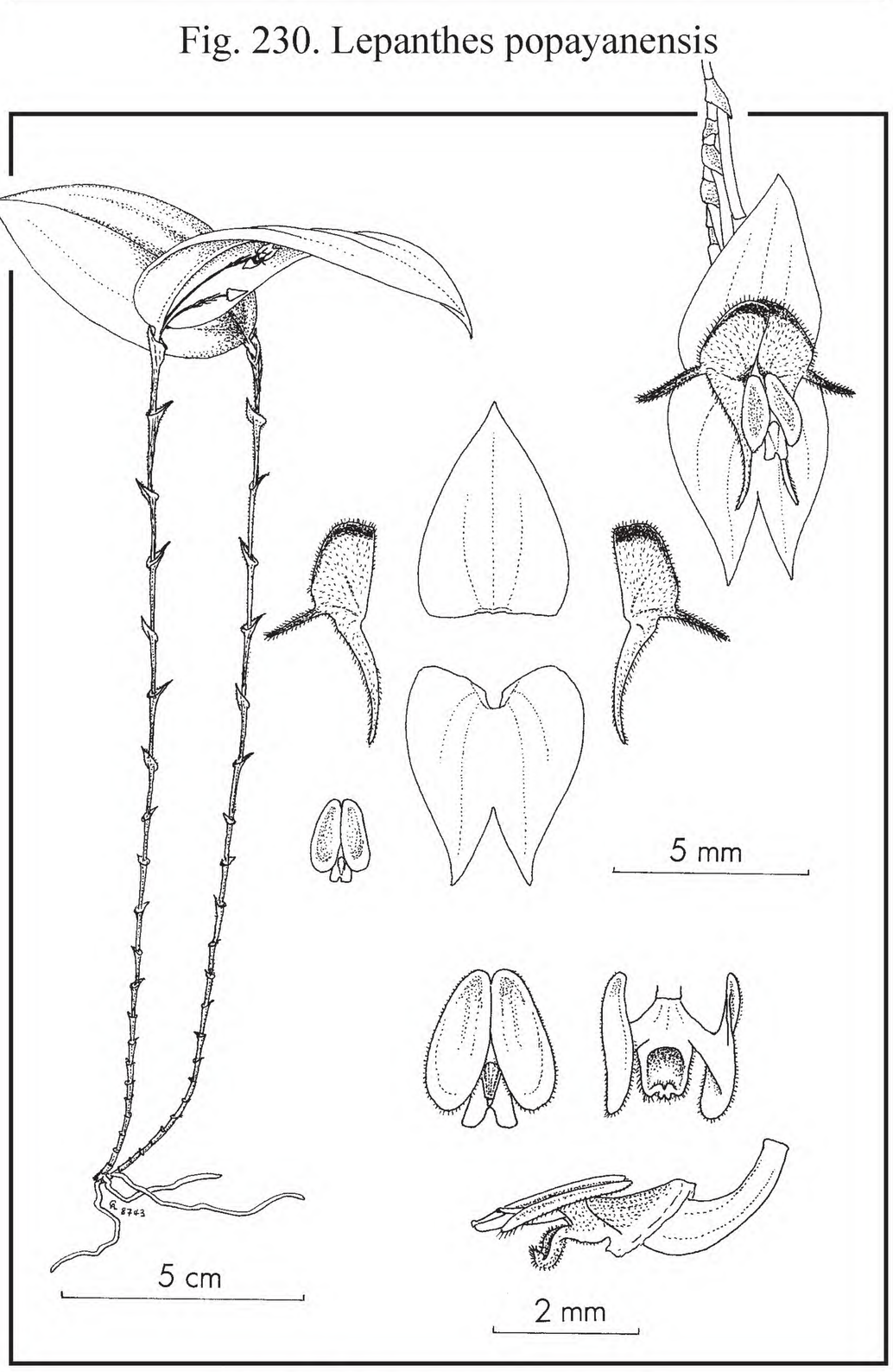



Fig. 232. Lepanthes posadae

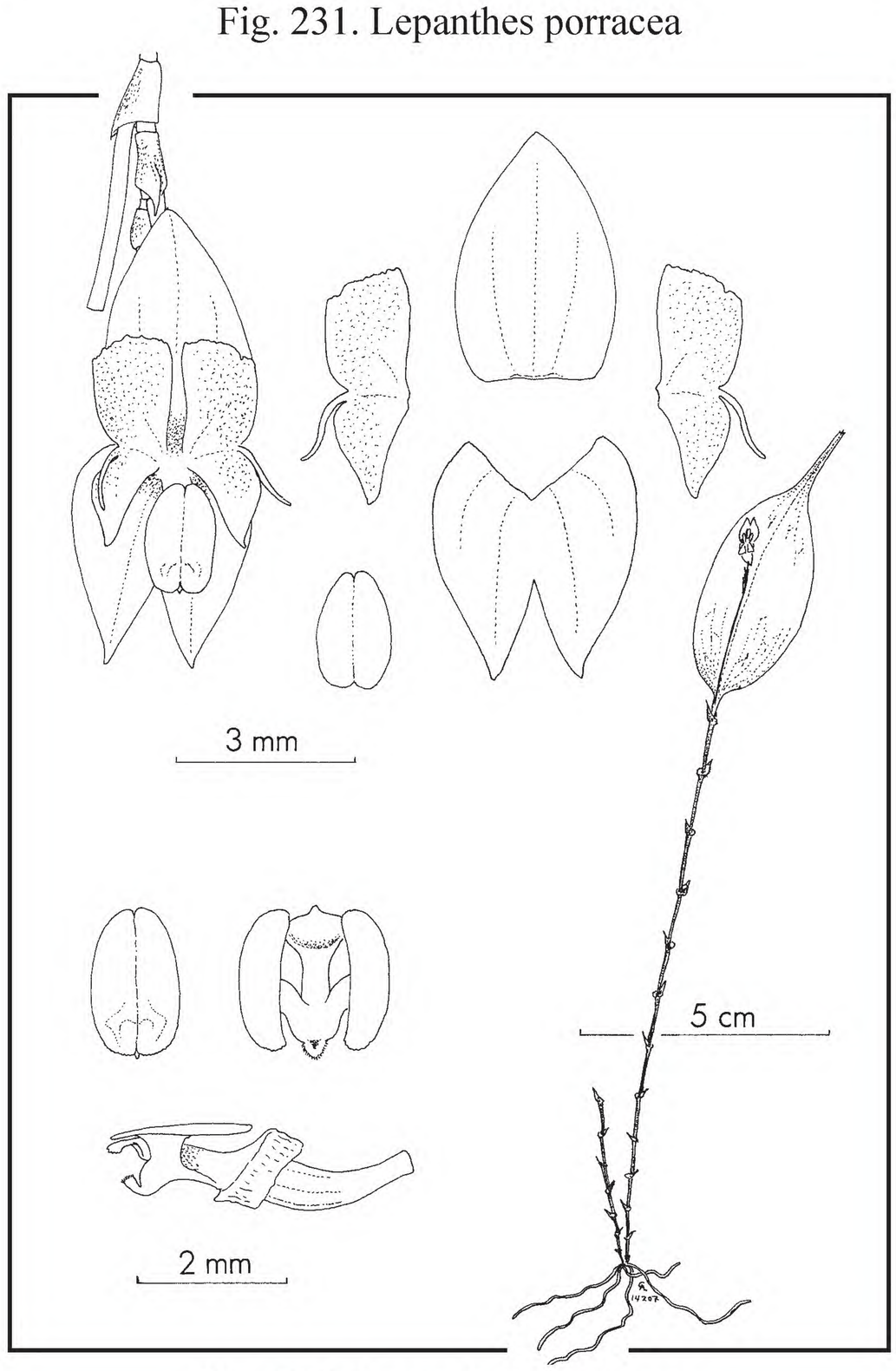



Fig. 233. Lepanthes praemorsa

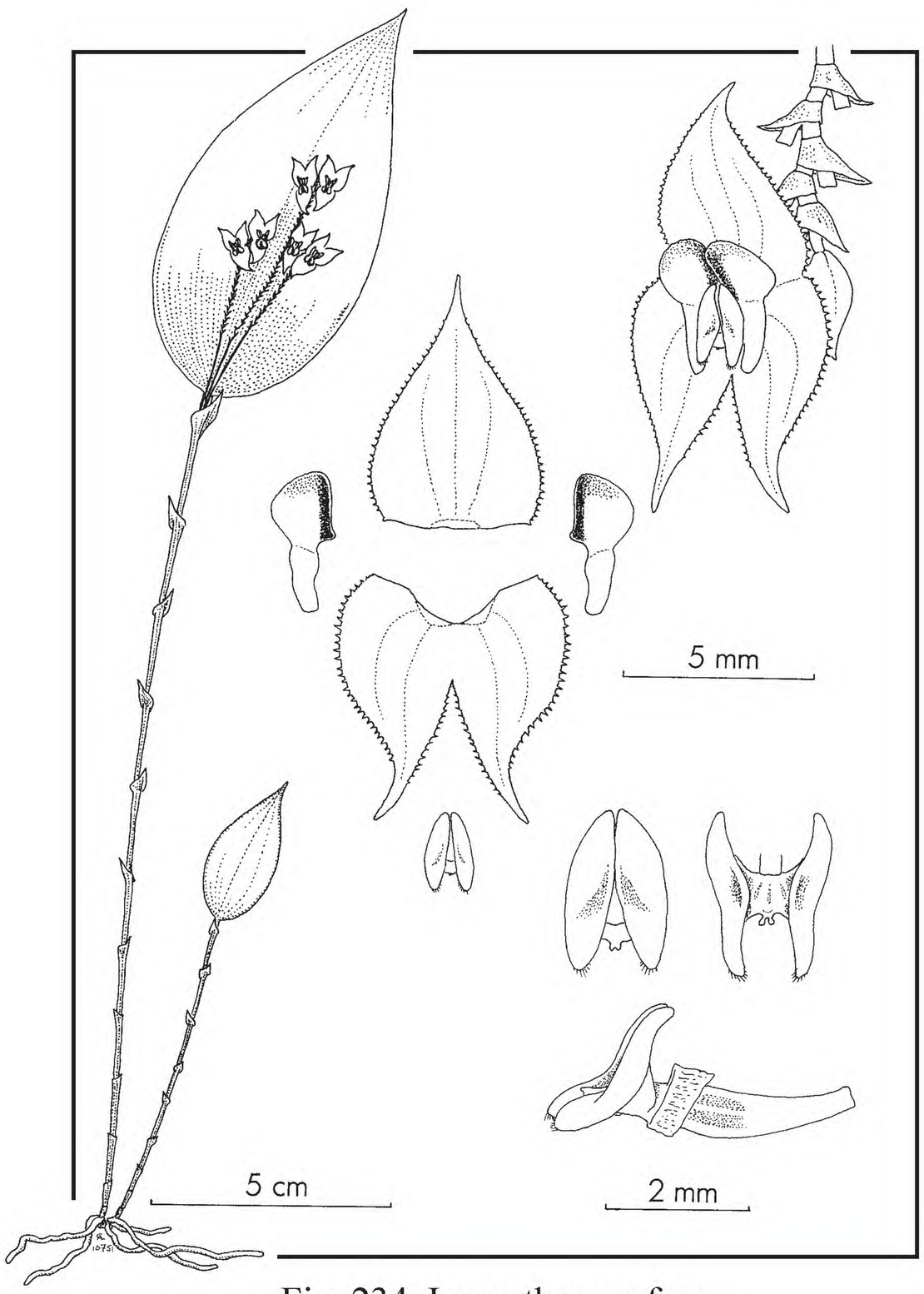



Fig. 234. Lepanthes profusa

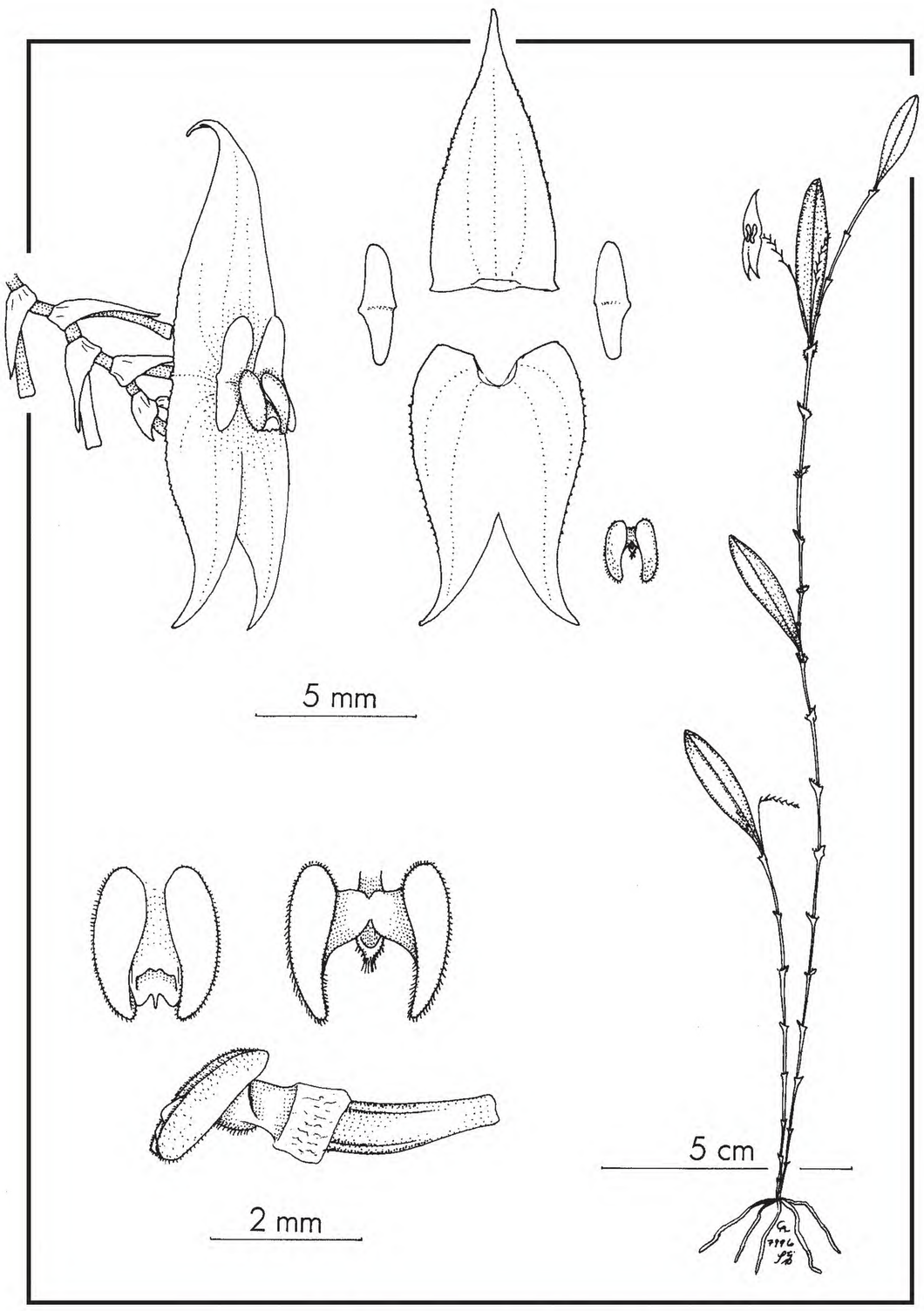



Fig. 235. Lepanthes prolifera

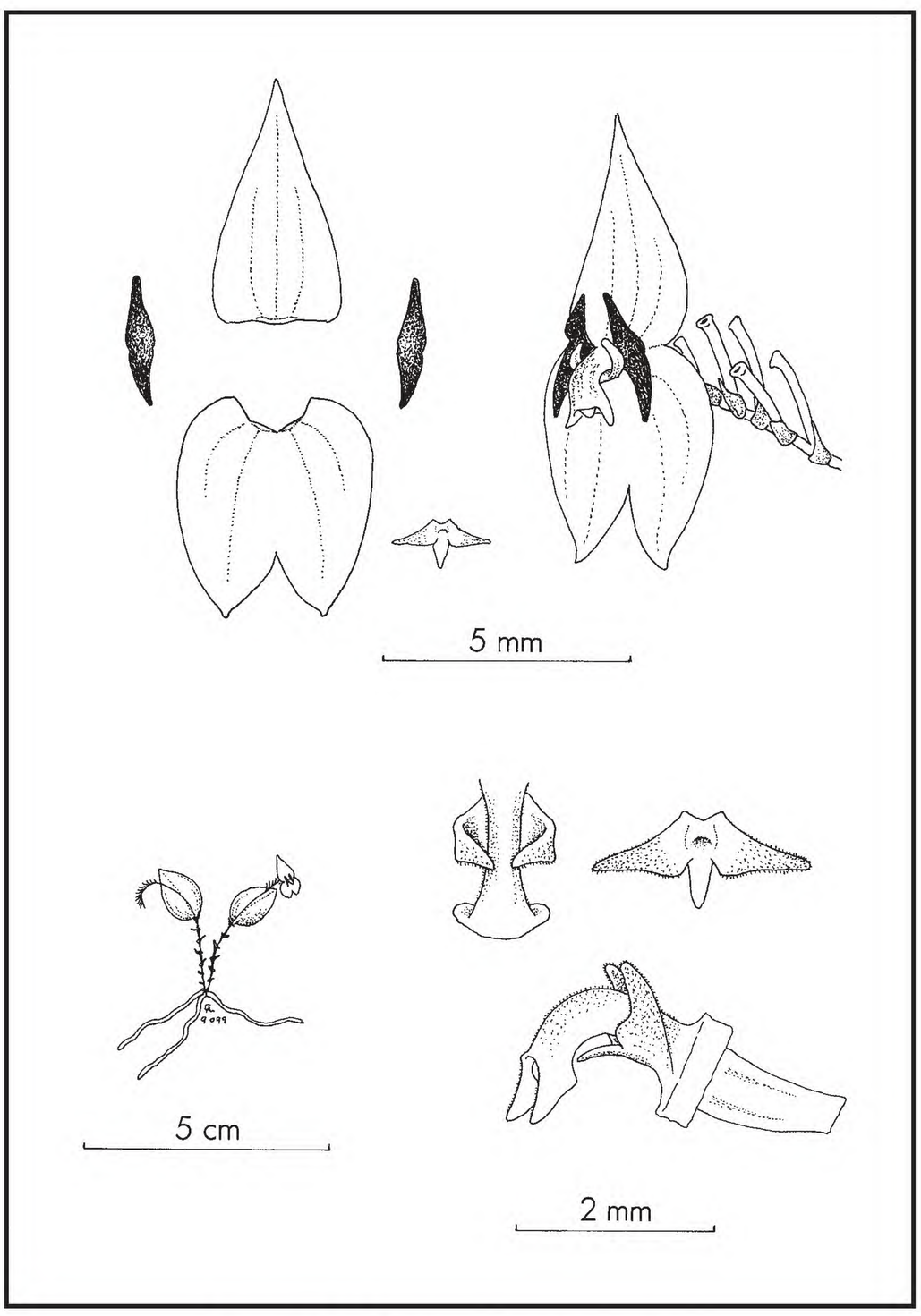



Fig. 236. Lepanthes pterygion

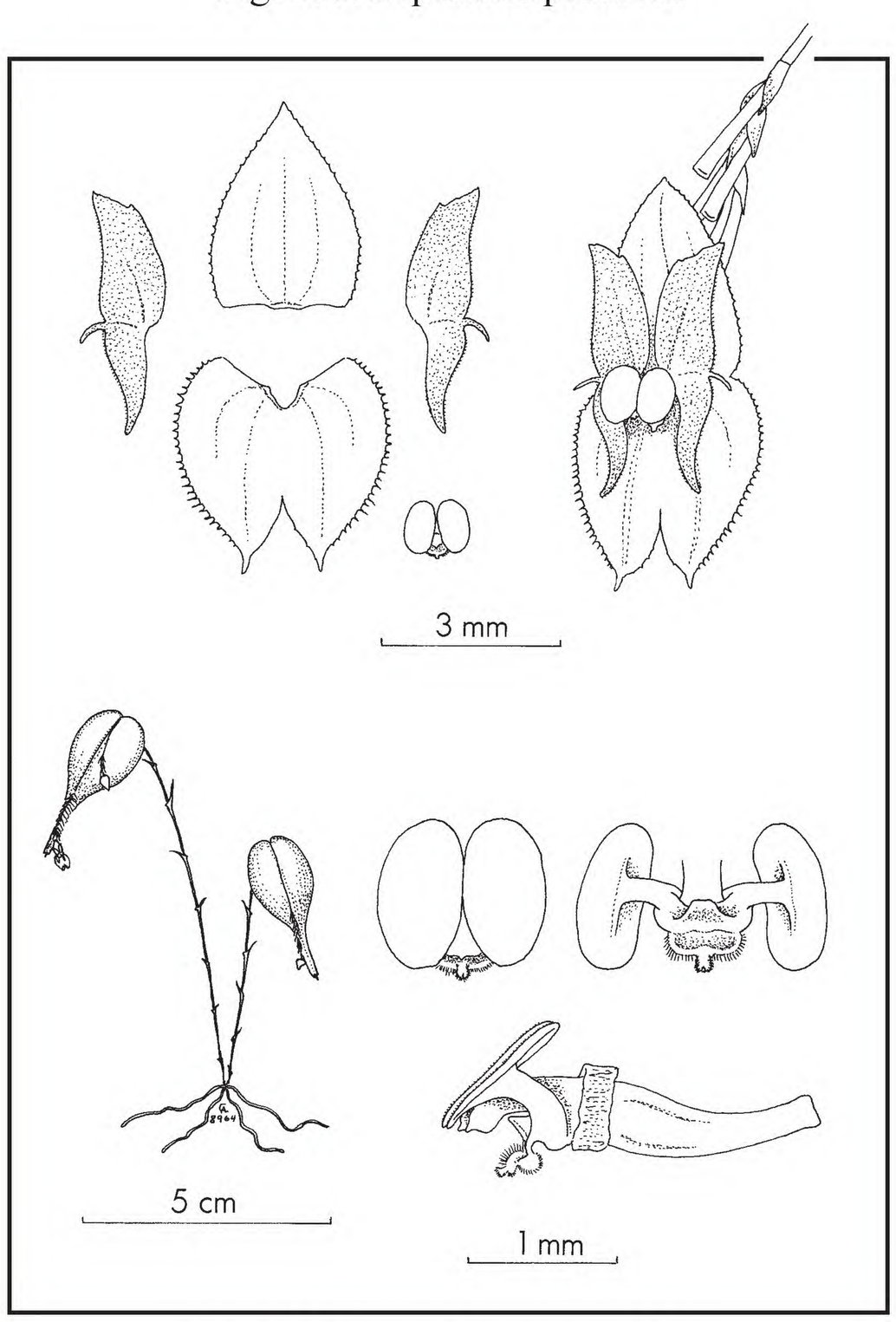



Fig. 237. Lepanthes pyramidalis

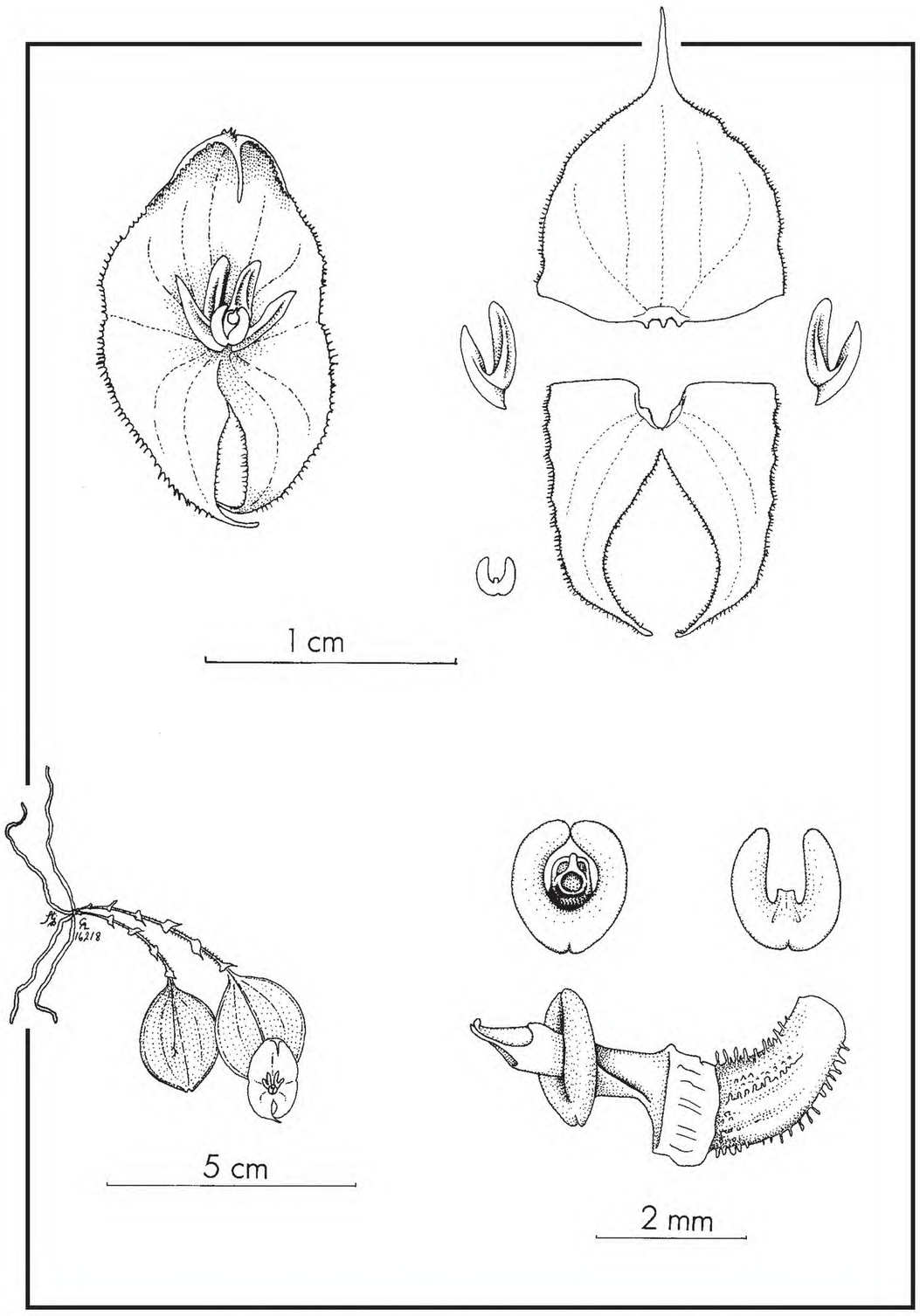



Fig. 238. Lepanthes quadricornis

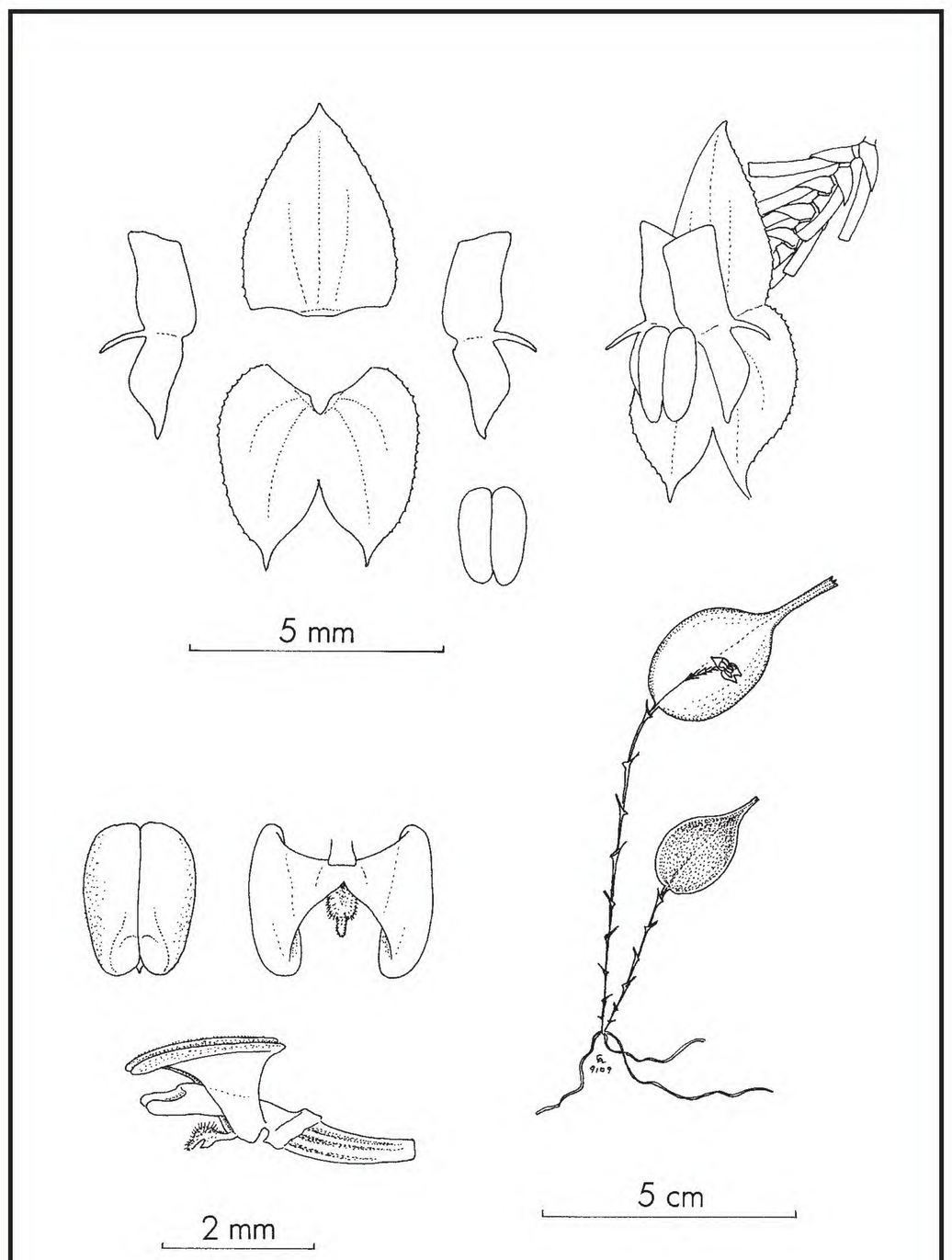



Fig. 239. Lepanthes quandi

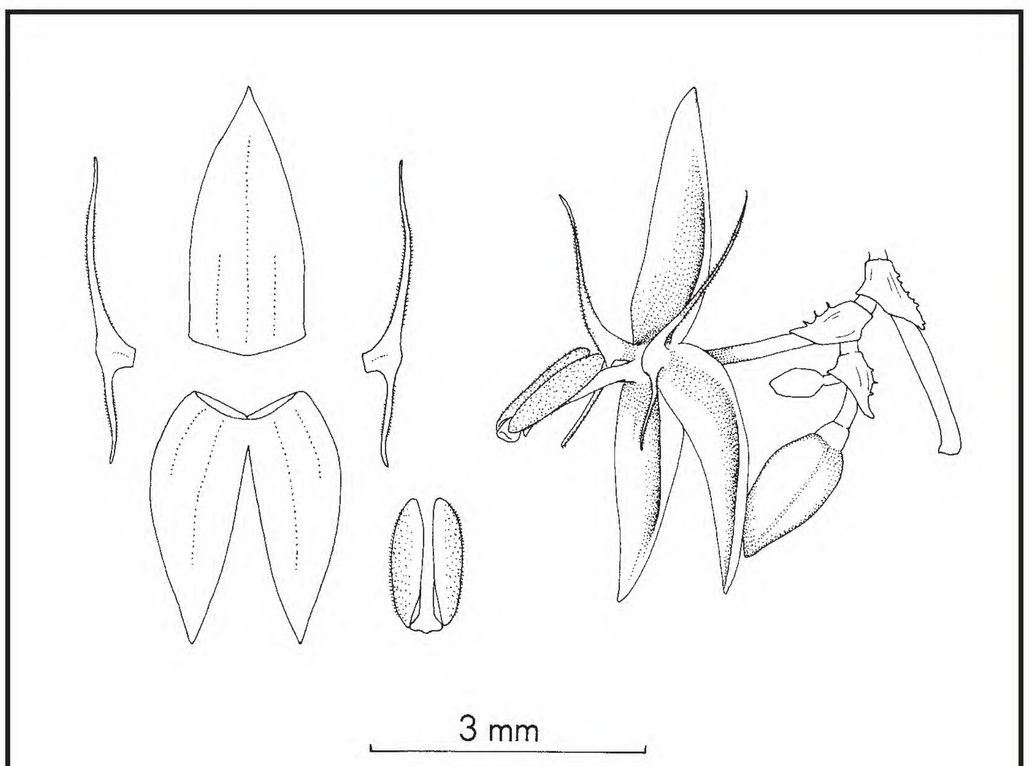



Fig. 240. Lepanthes ramosii

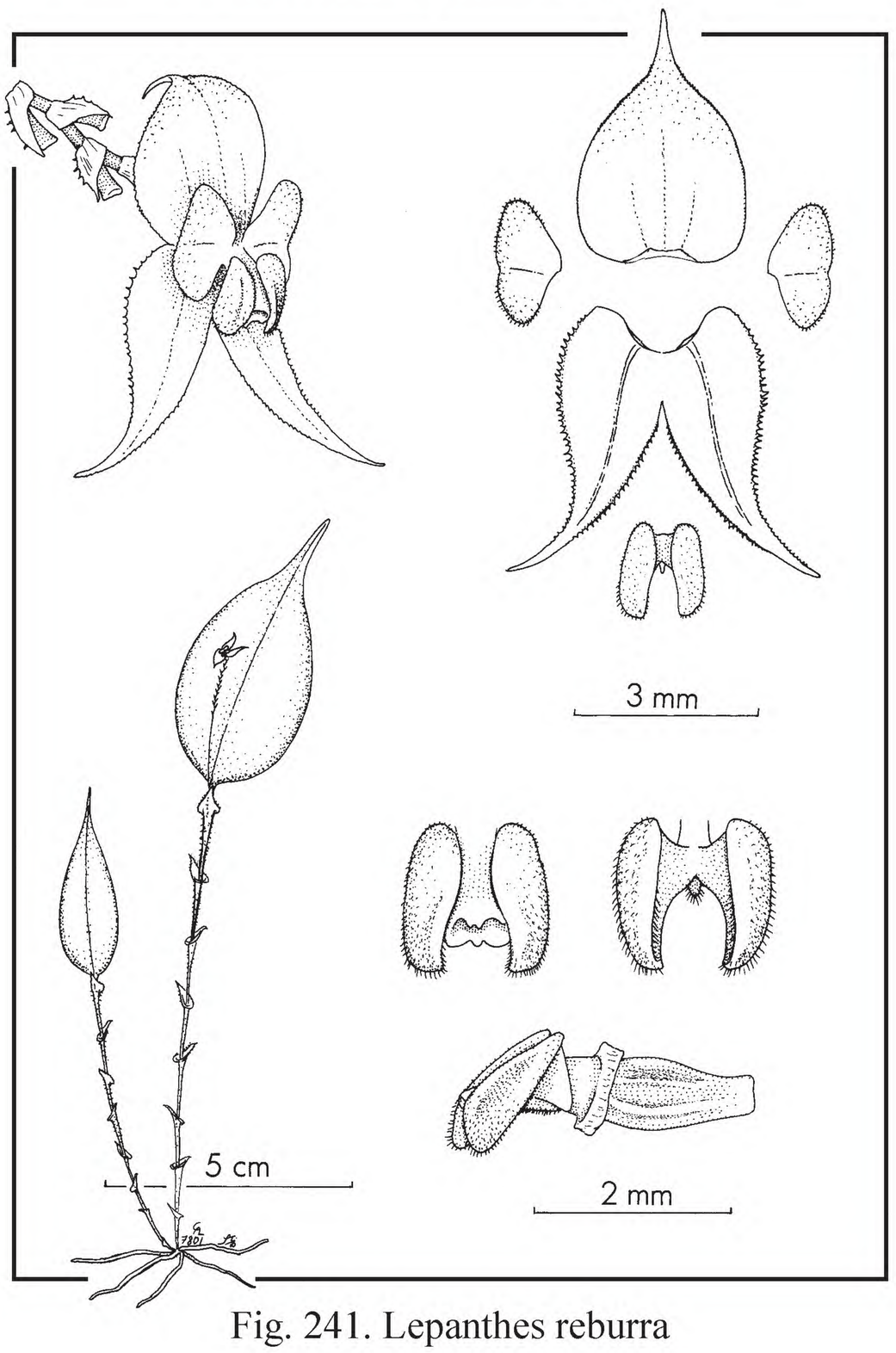



Fig. 241. Lepanthes reburra

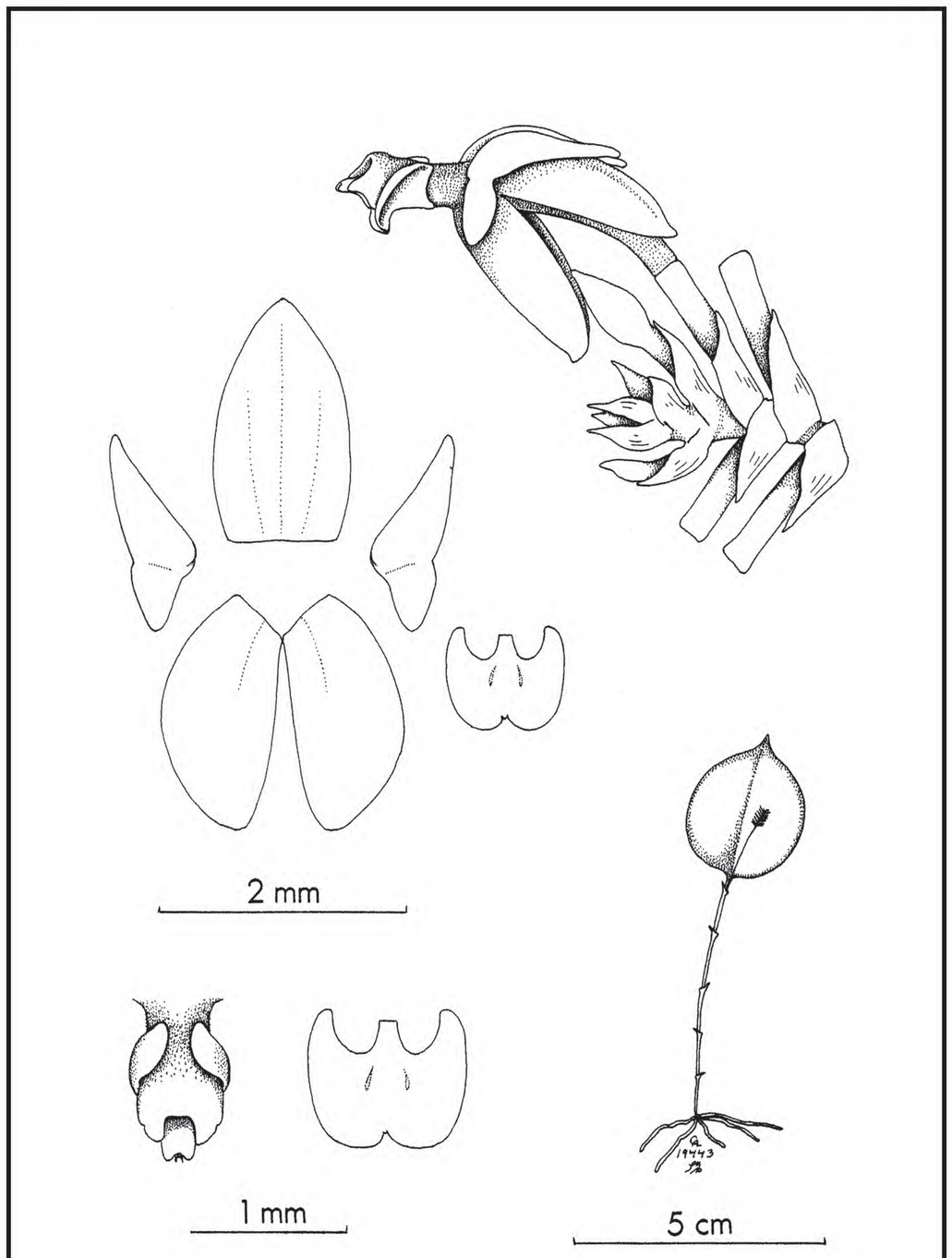



Fig. 242. Lepanthes refracta

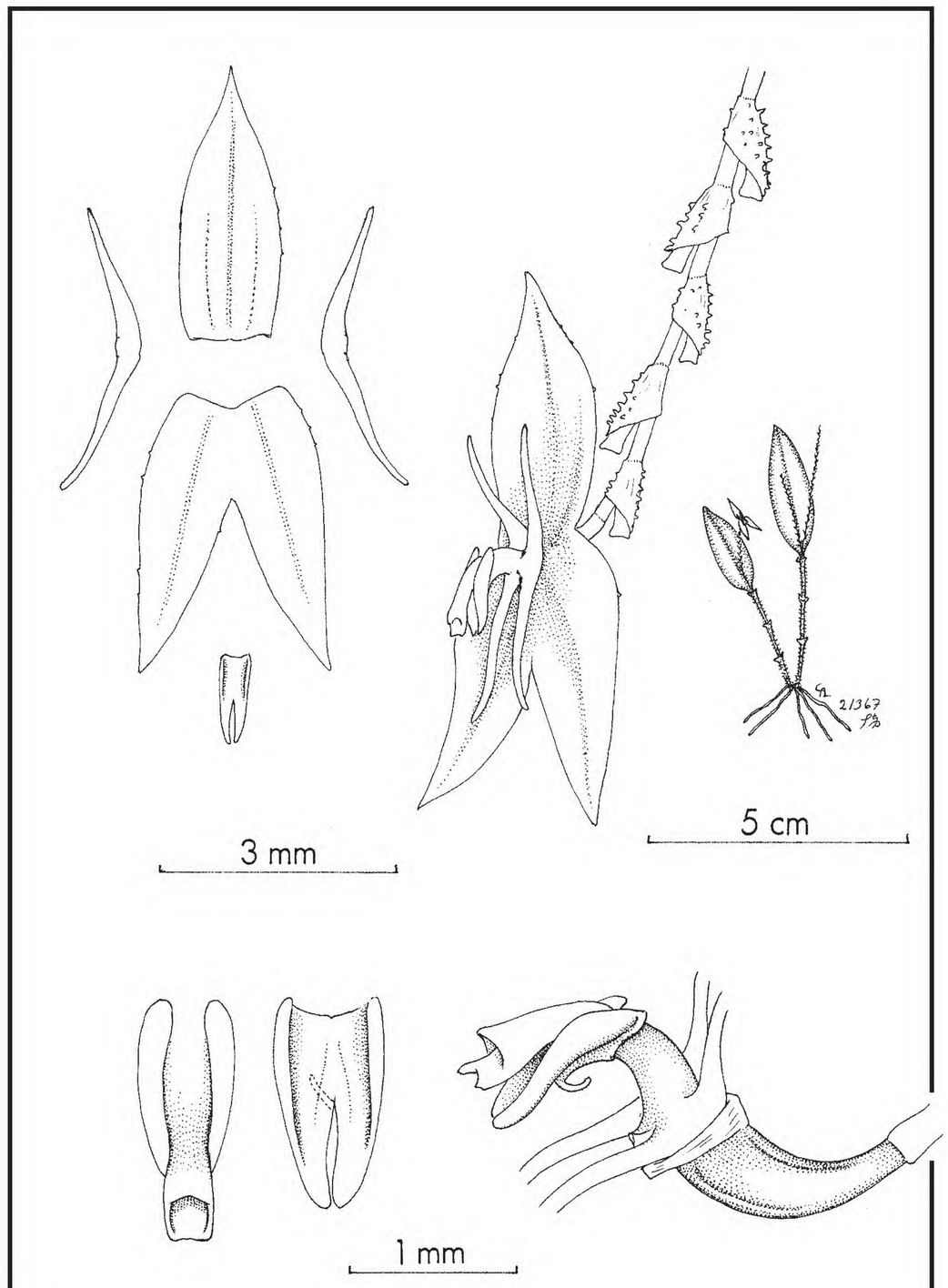



Fig. 243. Lepanthes renzii

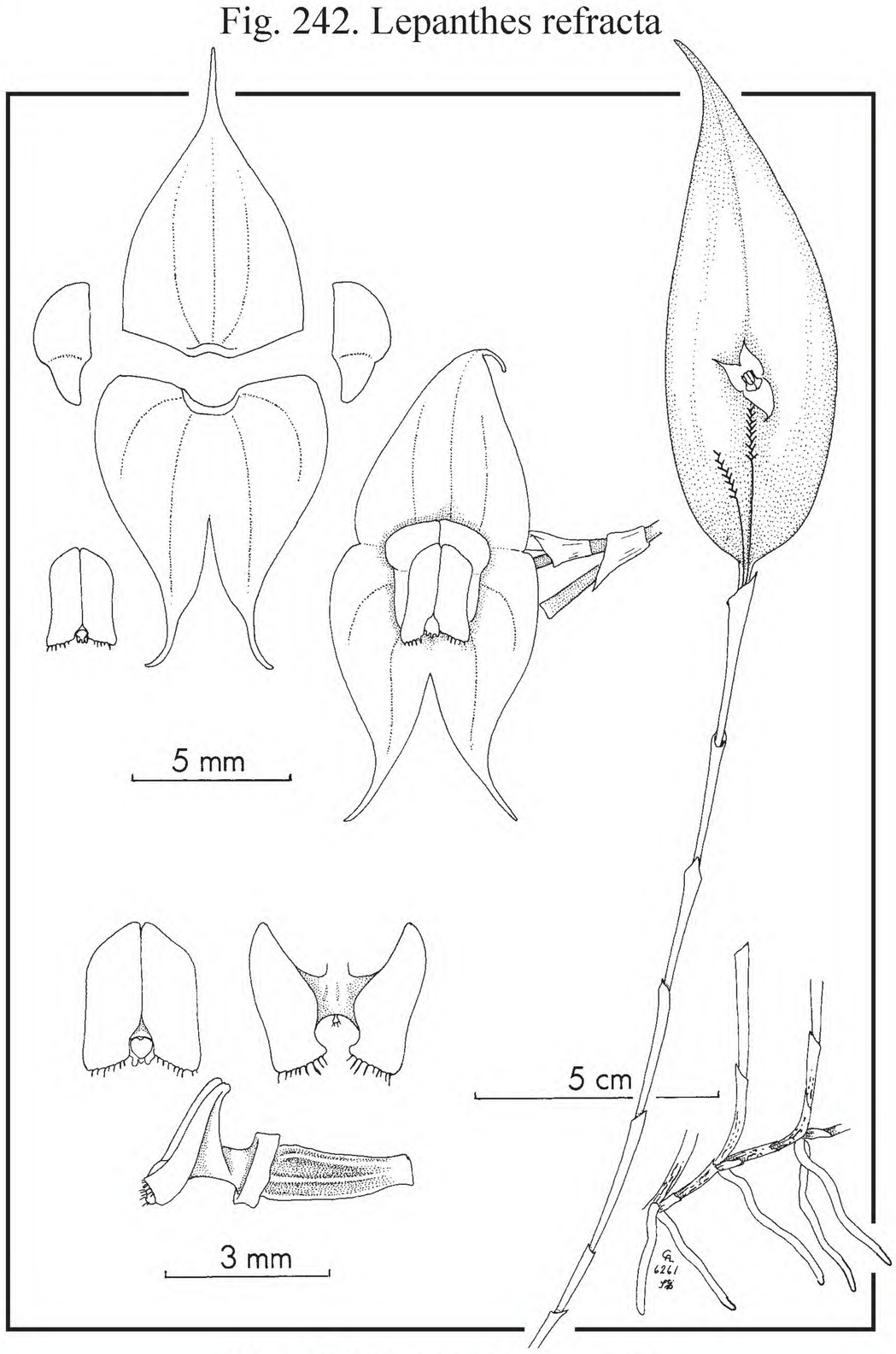



Fig. 244. Lepanthes repens

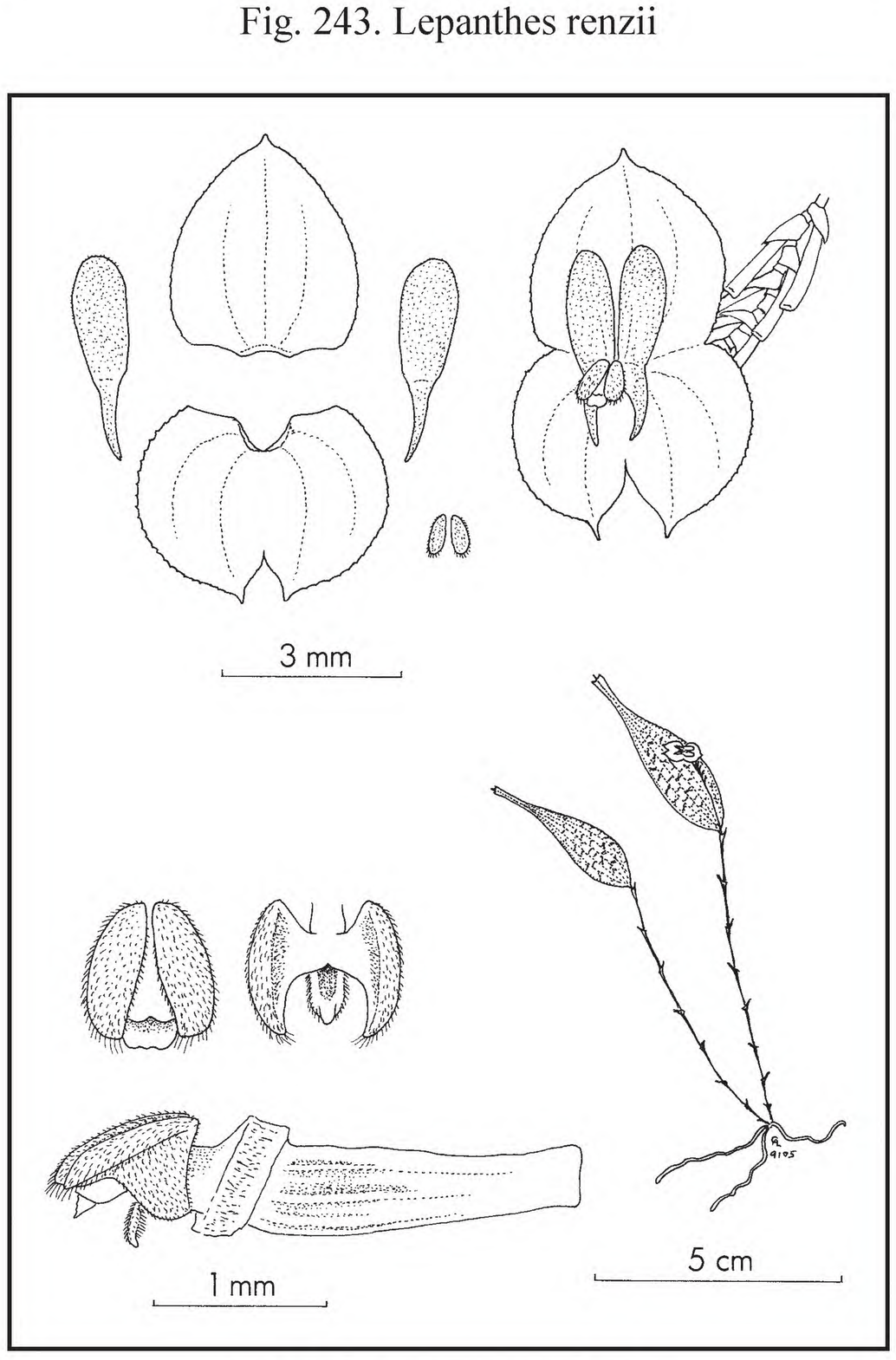



Fig. 245. Lepanthes reticulata

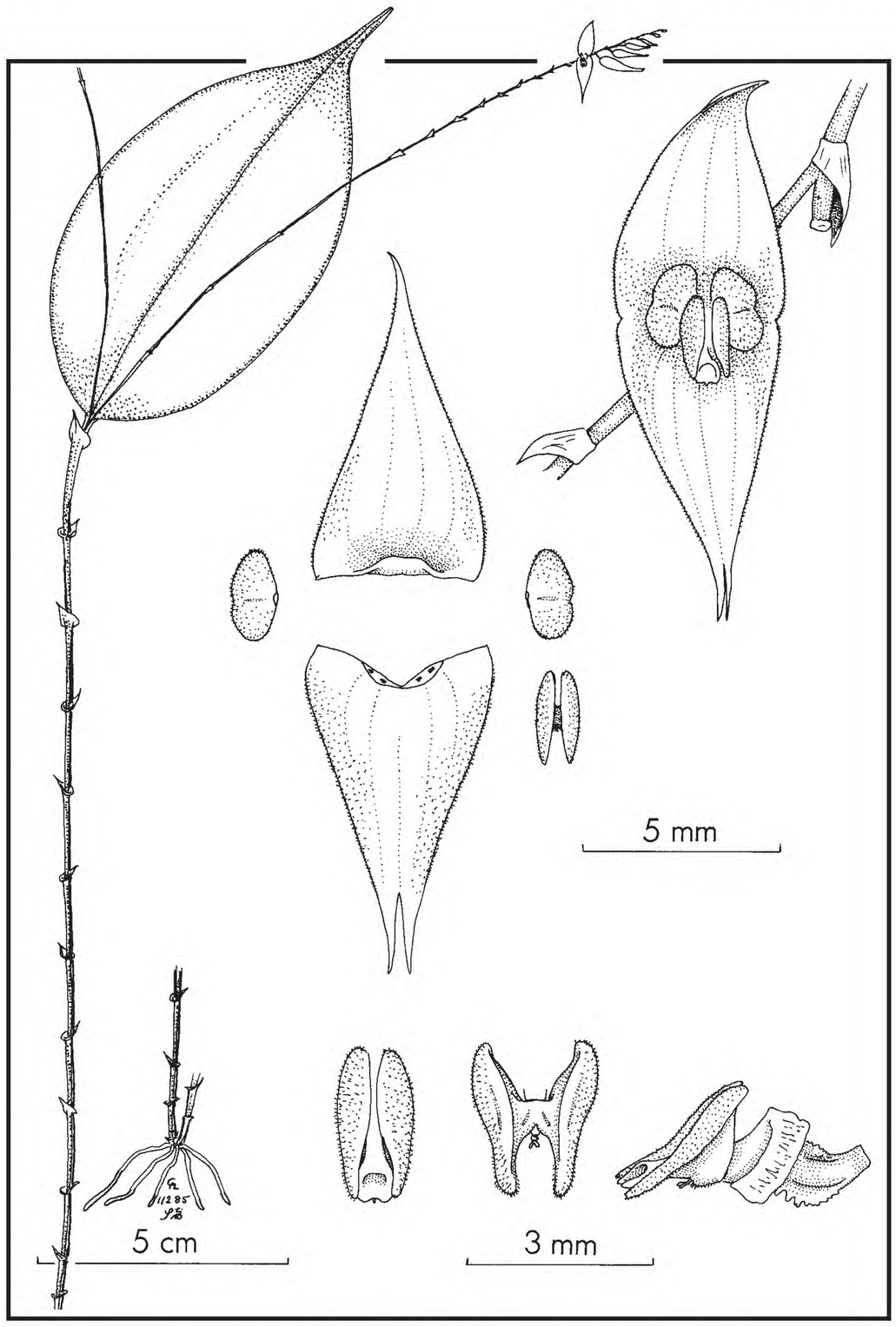



Fig. 246. Lepanthes rhombipetala

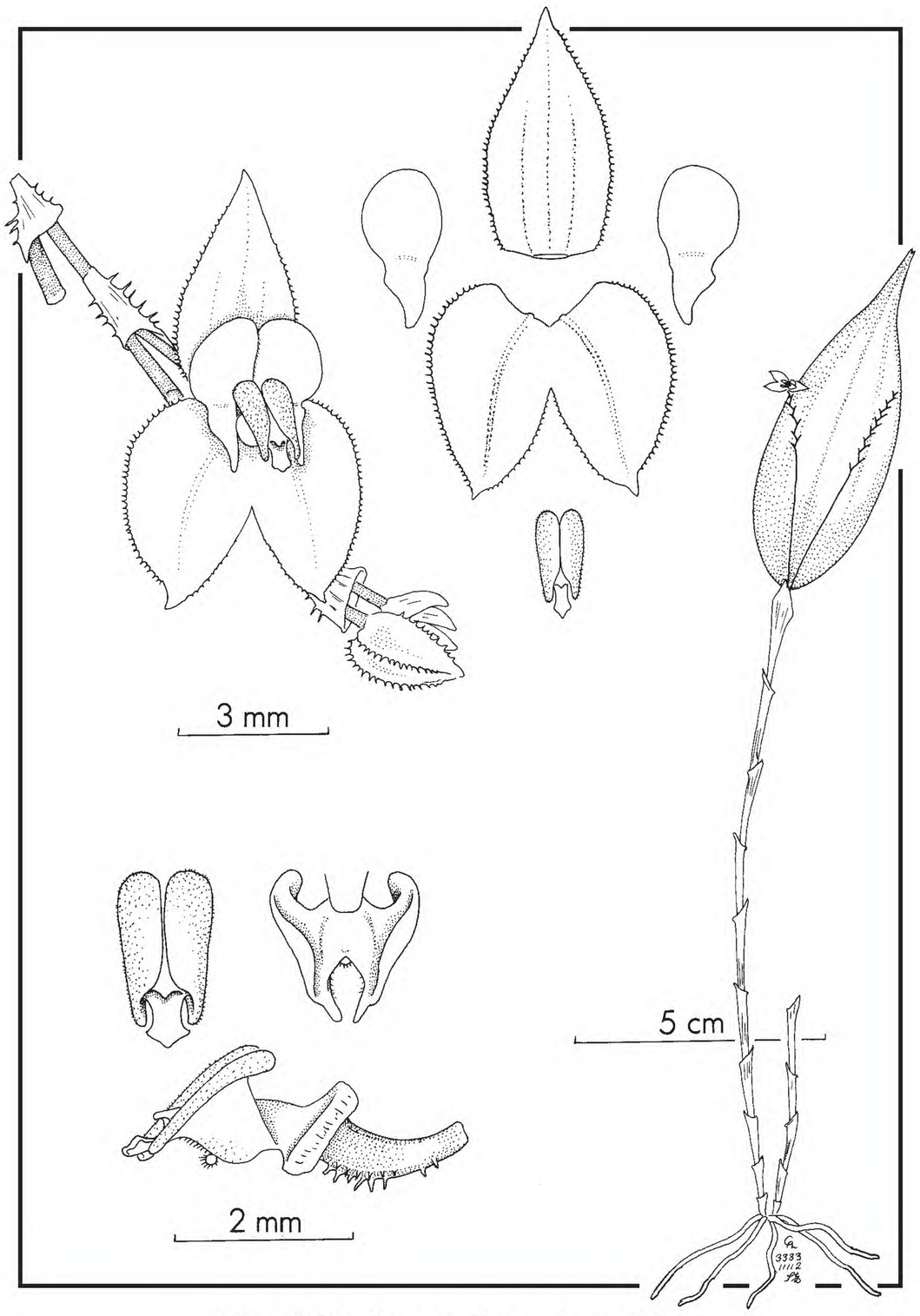



Fig. 247. Lepanthes rhynchion

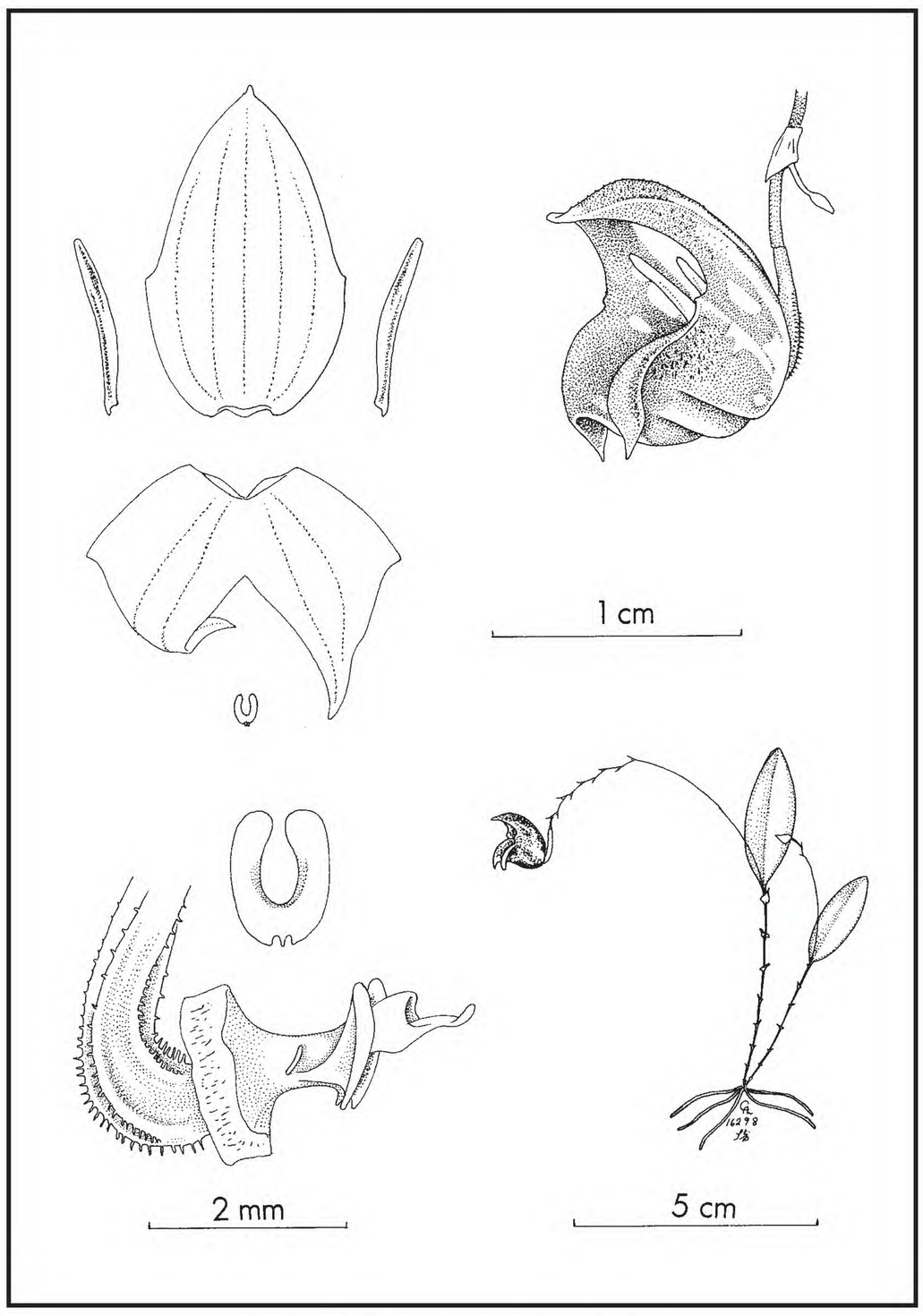



Fig. 248. Lepanthes ribes

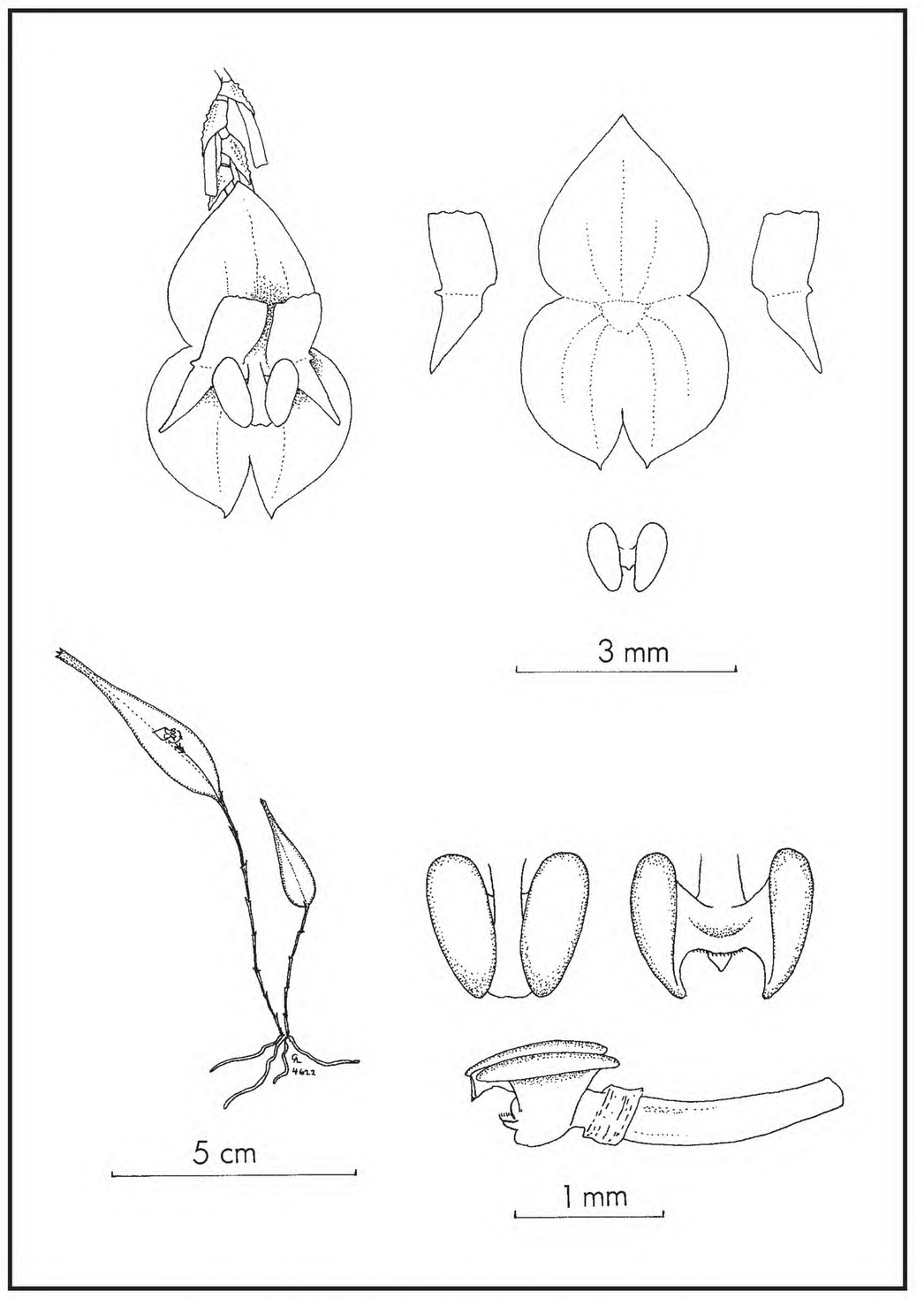



Fig. 249. Lepanthes ricaurtensis

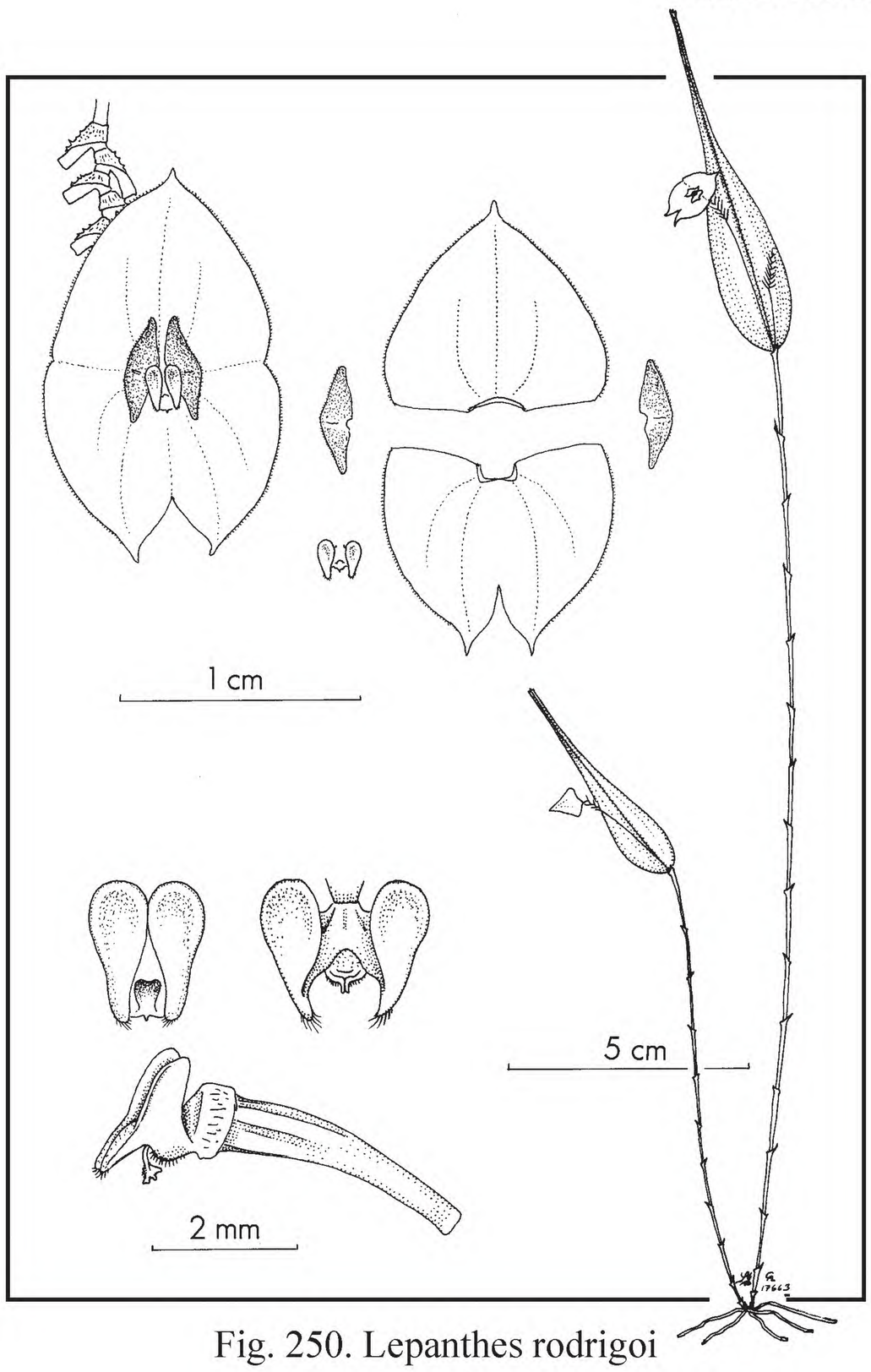



Fig. 250. Lepanthes rodrigoi

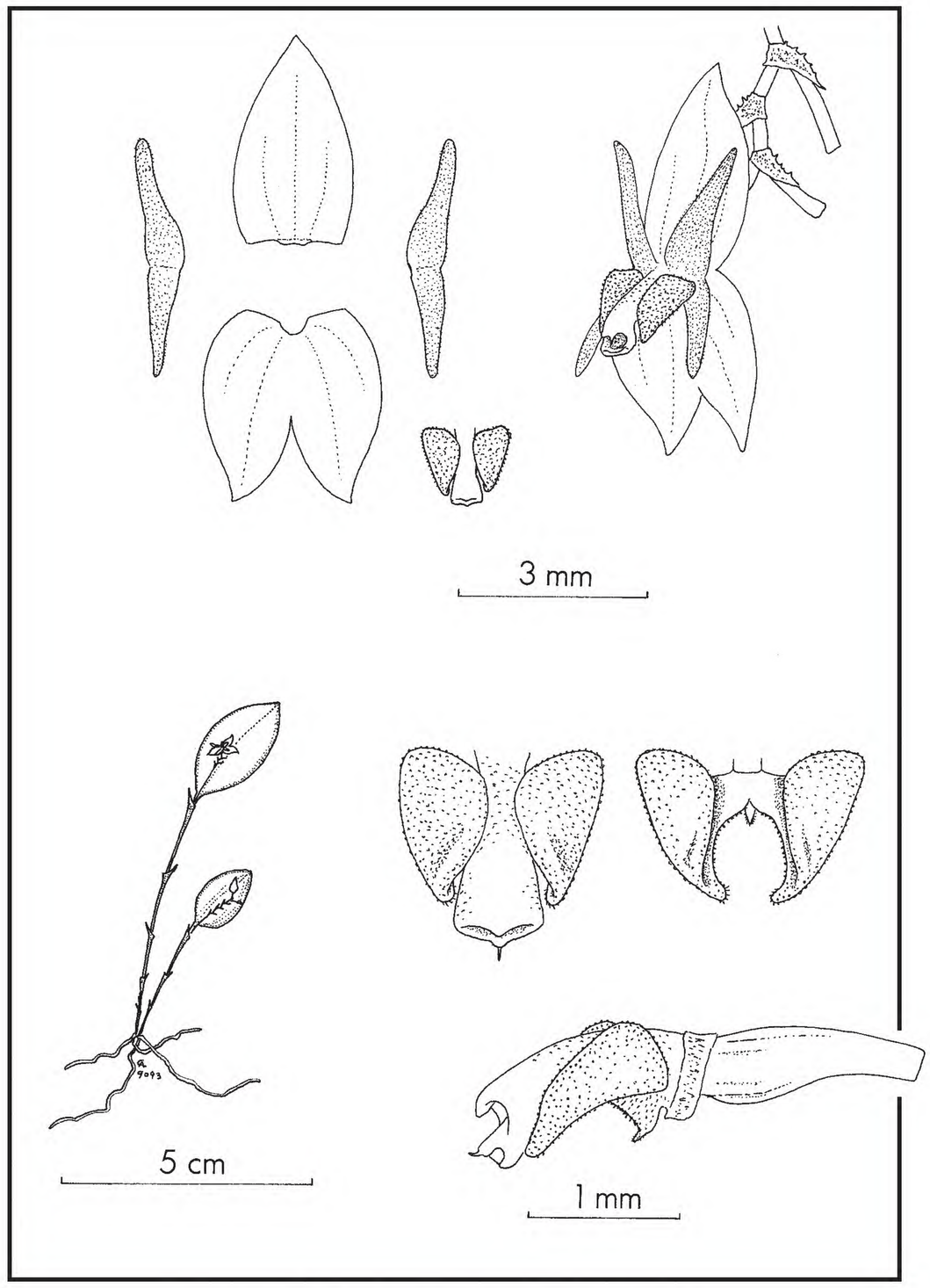



Fig. 251. Lepanthes roezliana

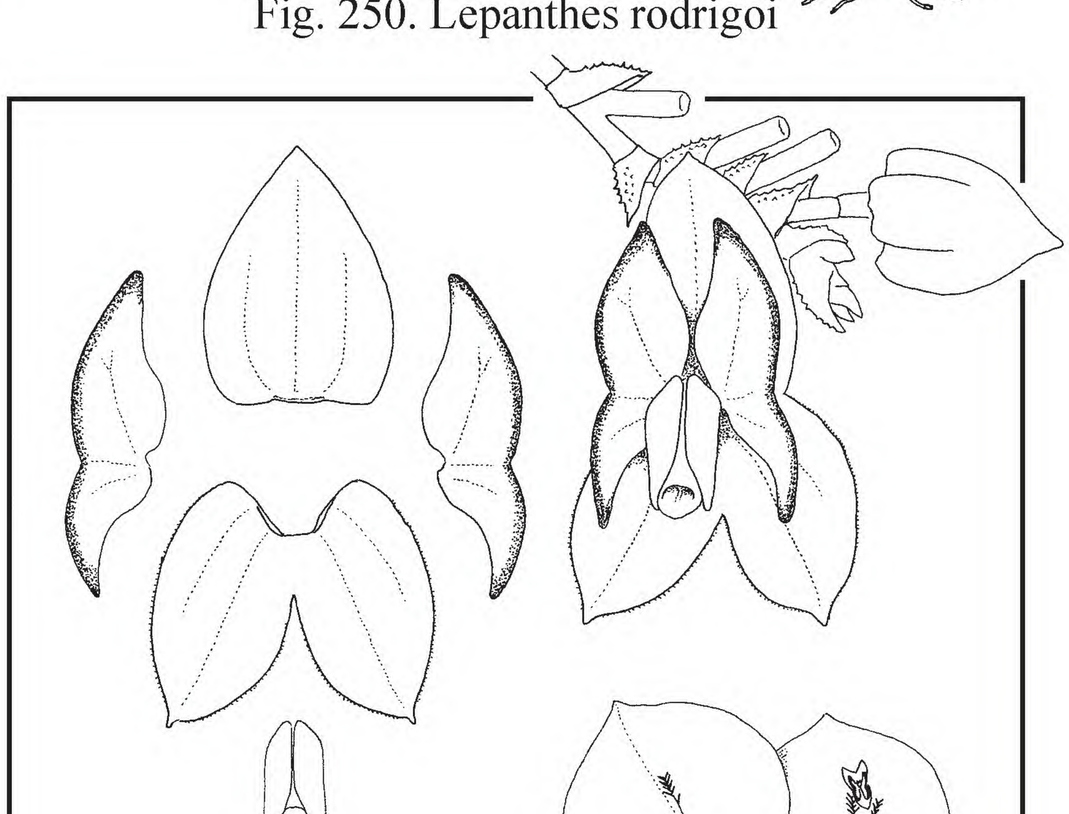



Fig. 252. Lepanthes rutrum

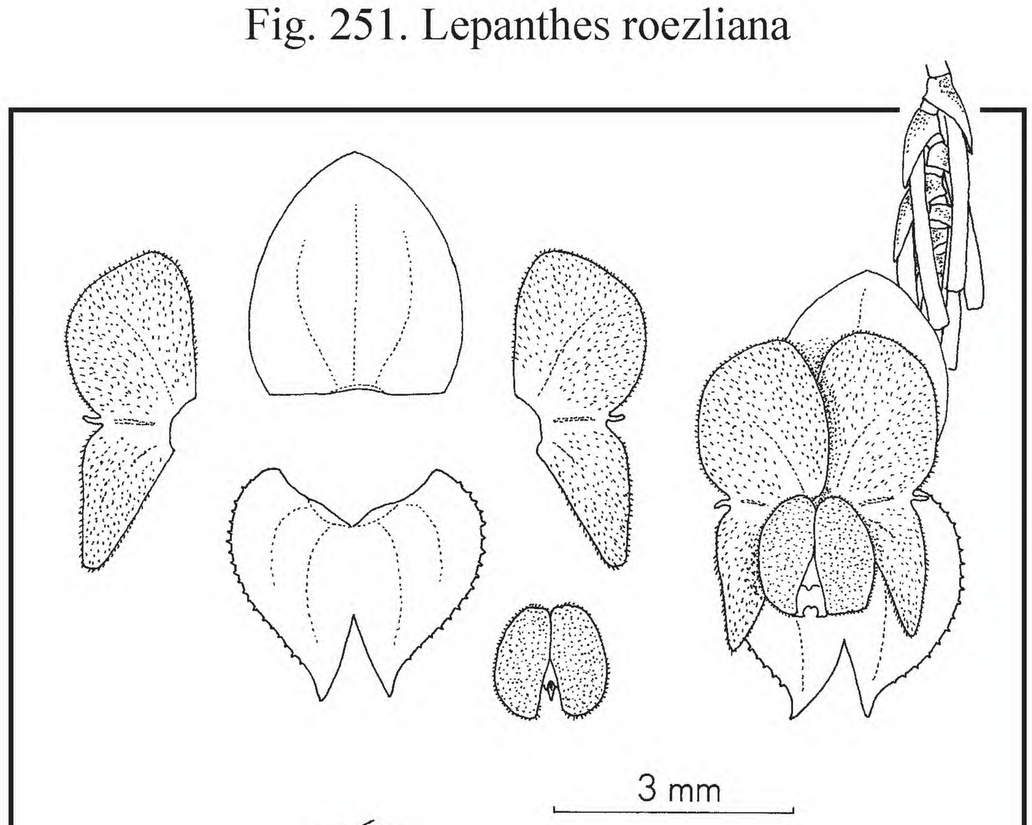



Fig. 253. Lepanthes saccata

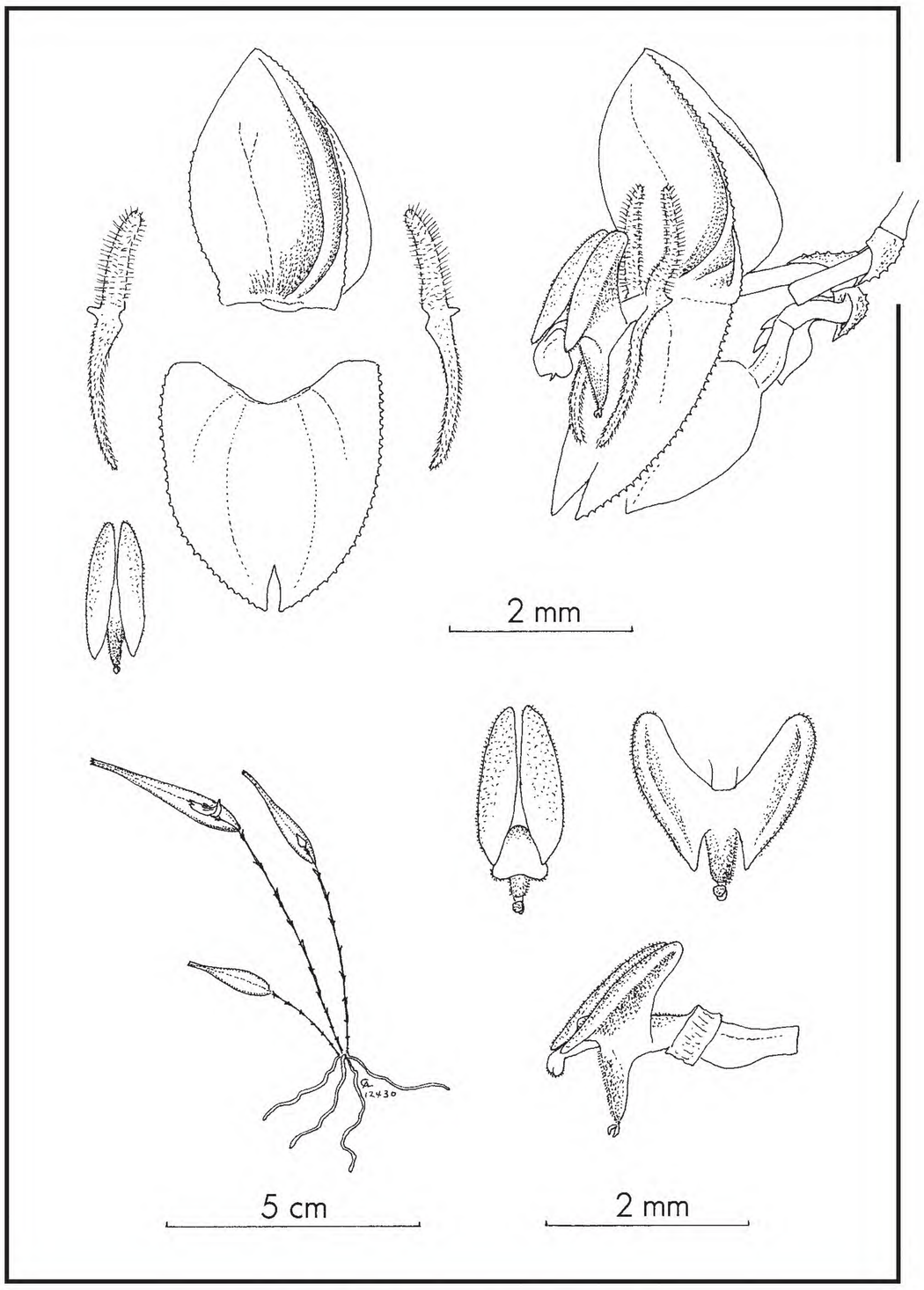



Fig. 254. Lepanthes satyrica

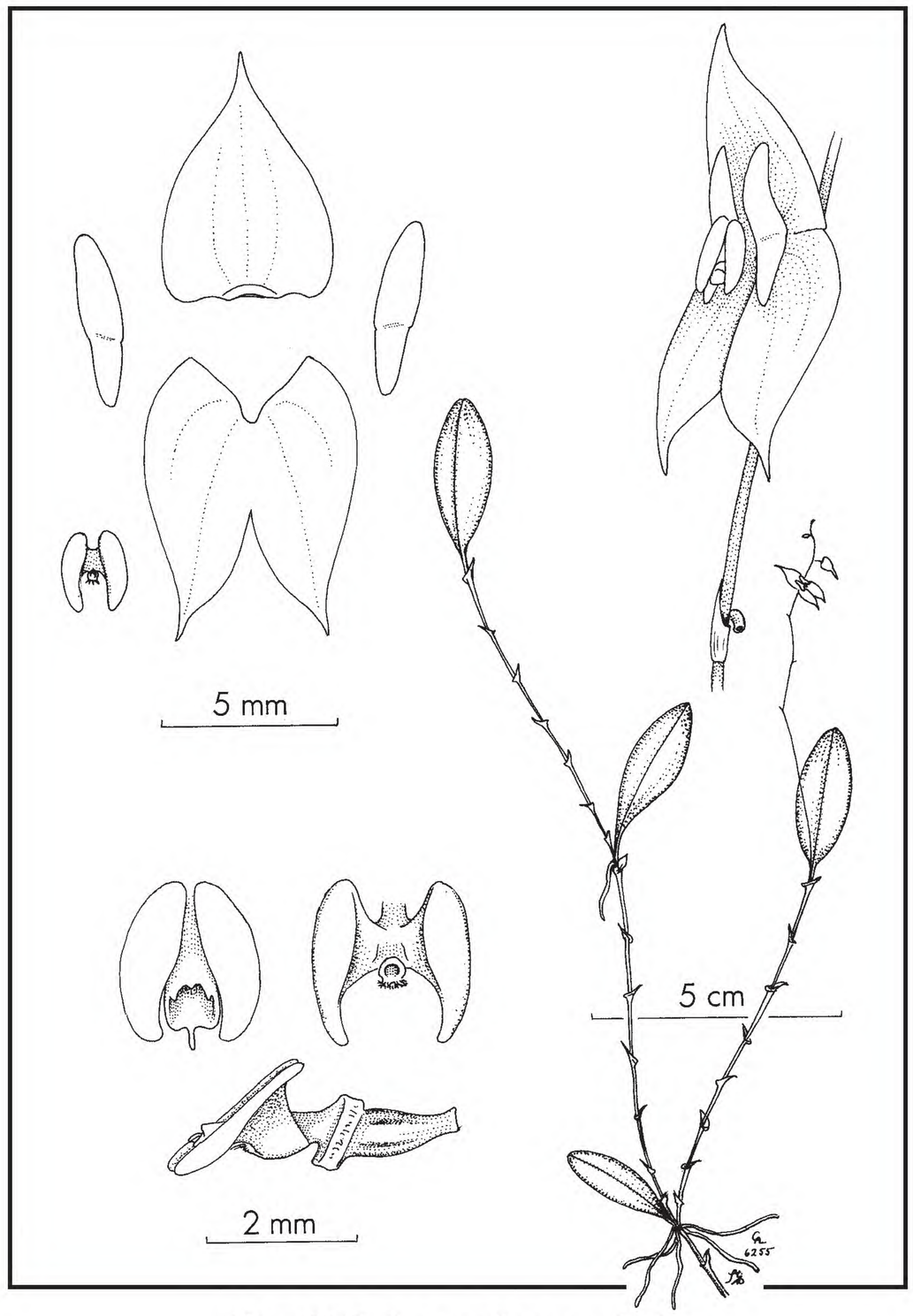



Fig. 255. Lepanthes scalaris

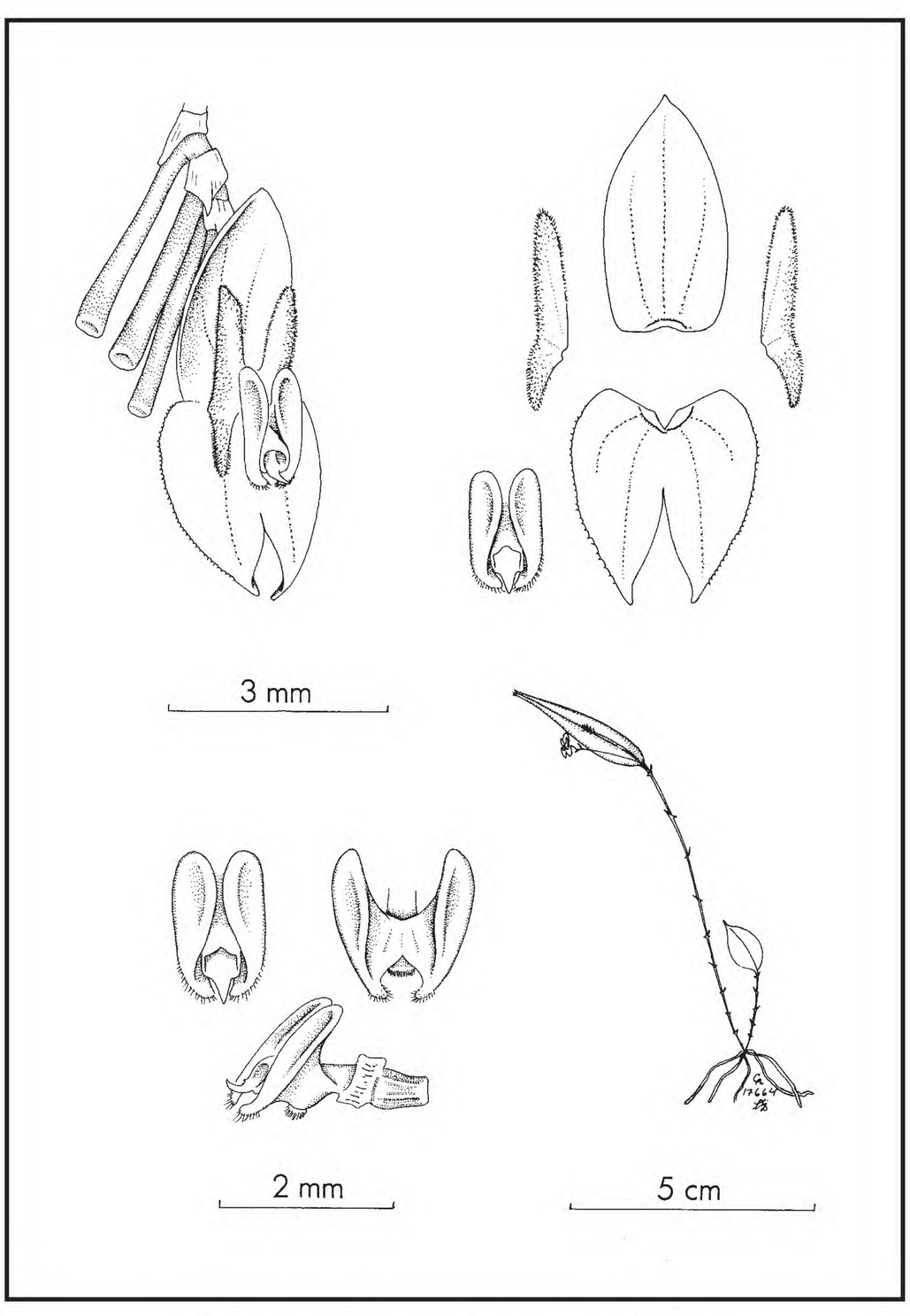



Fig. 256. Lepanthes scopulifera

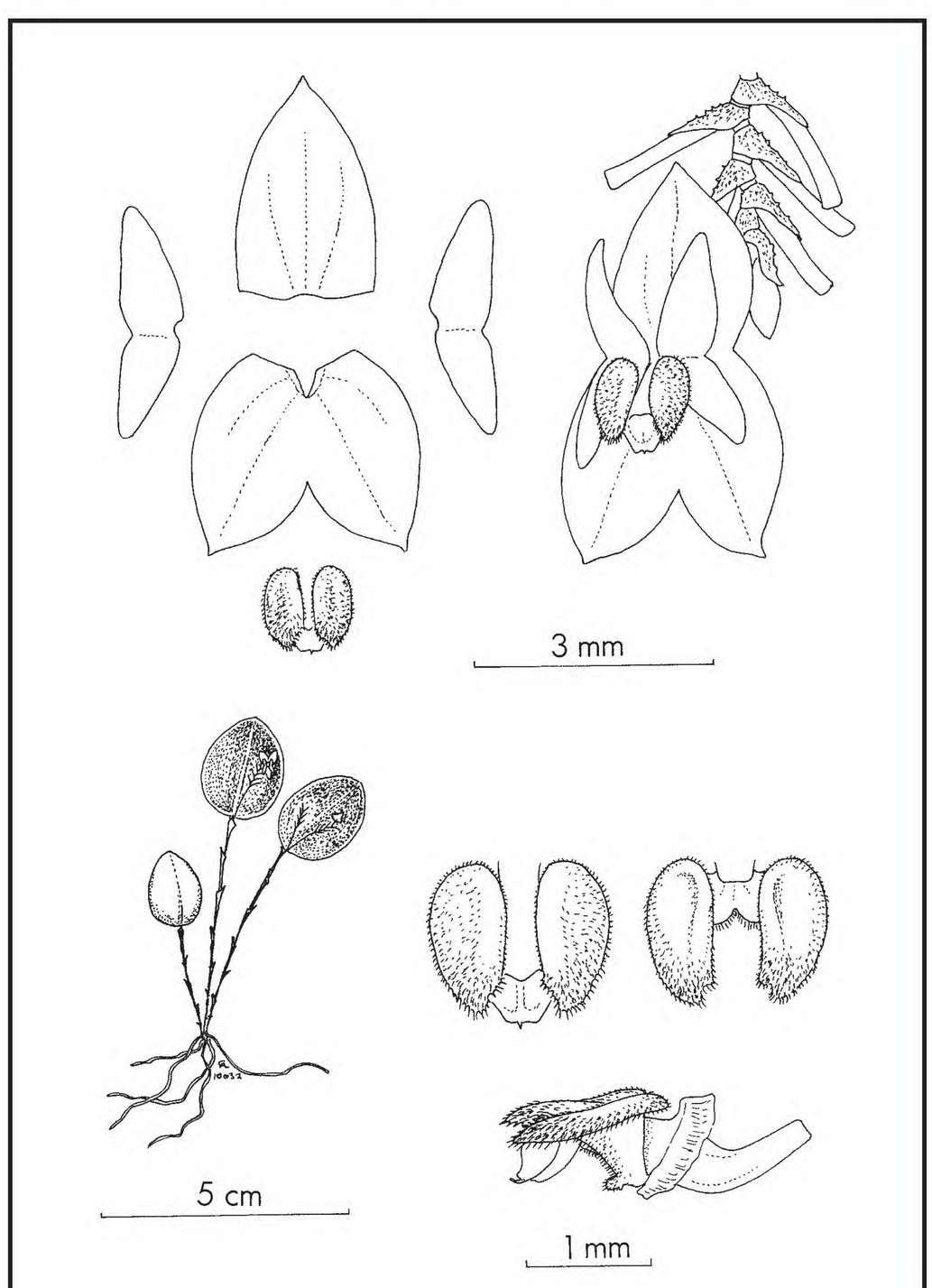



Fig. 257. Lepanthes sericinitens

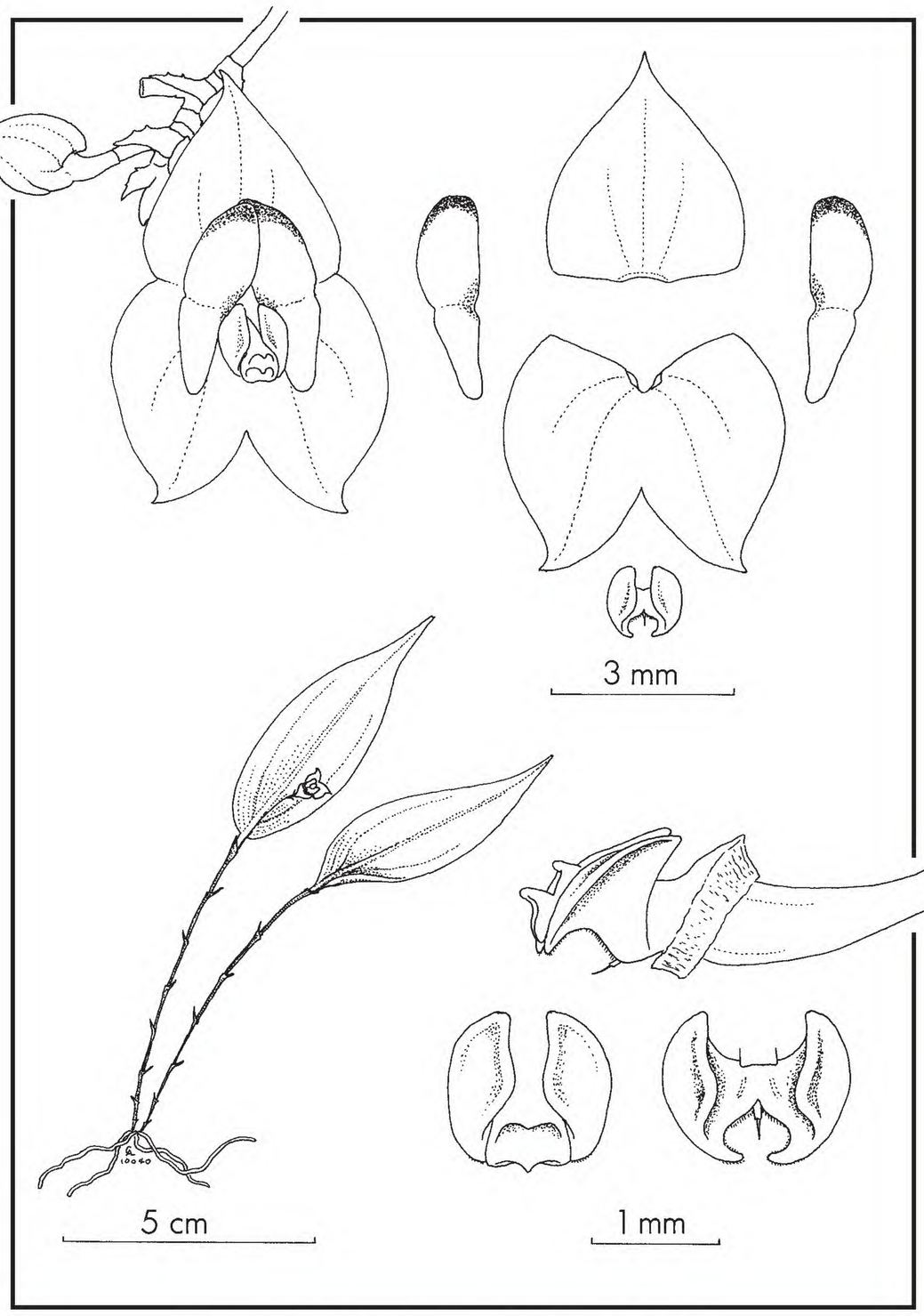



Fig. 258. Lepanthes setifera

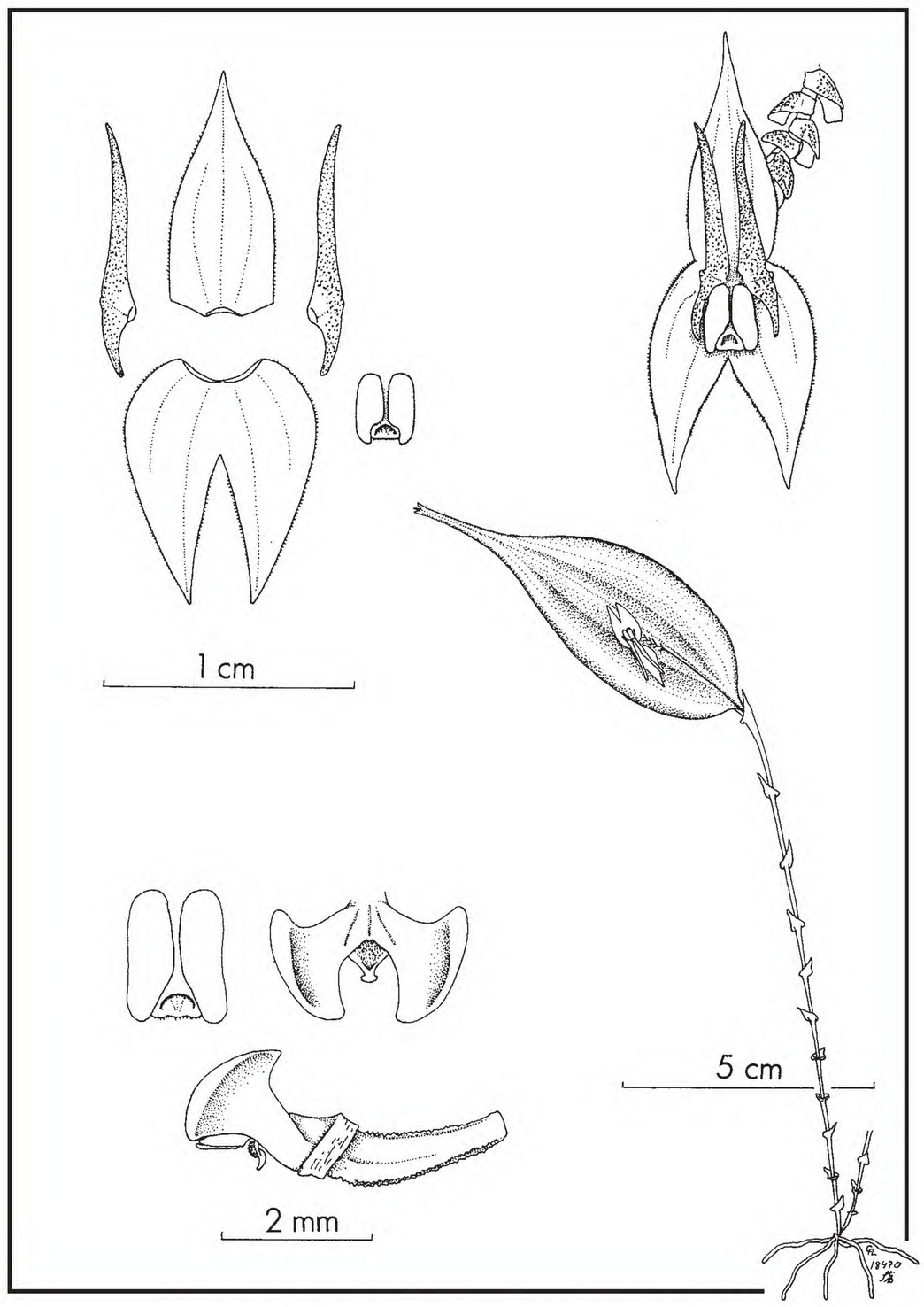



Fig. 259. Lepanthes silverstonei

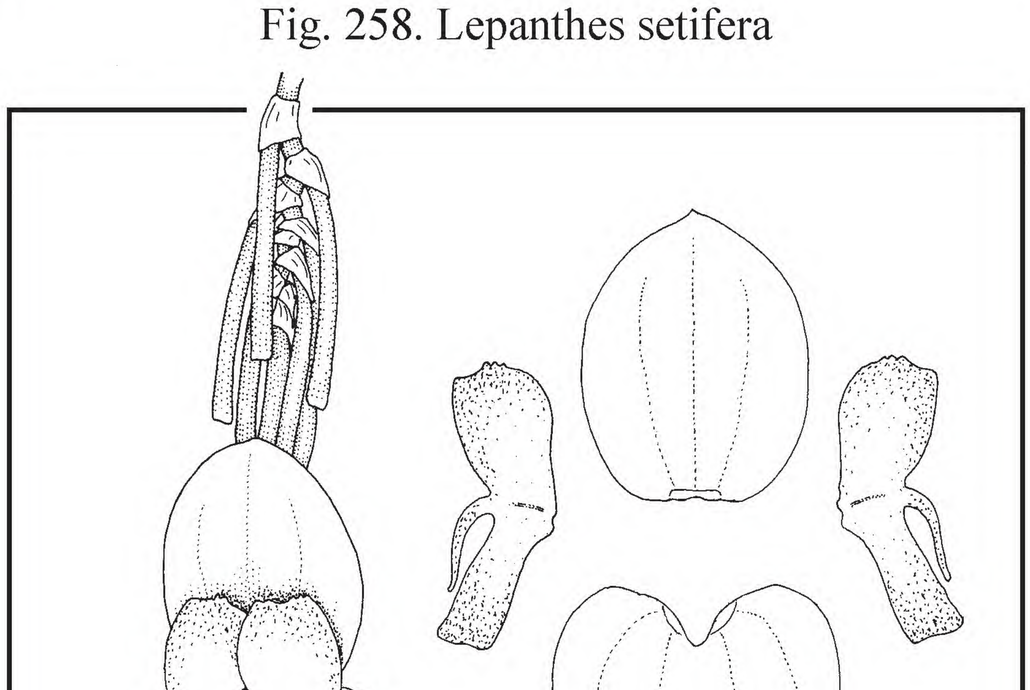



Fig. 260. Lepanthes sinuosa

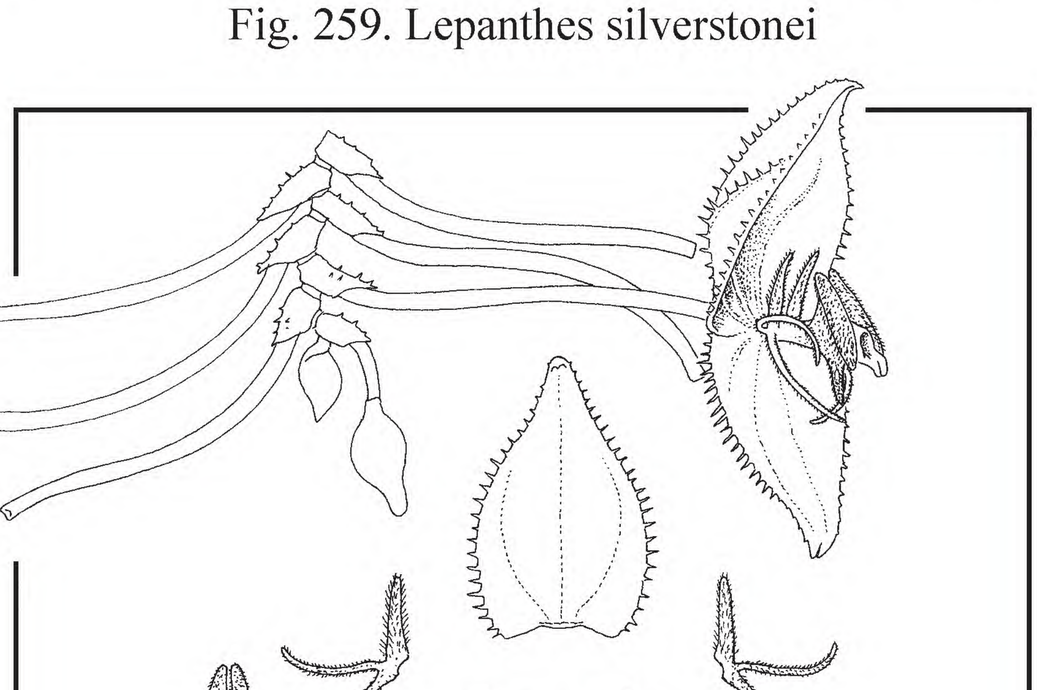
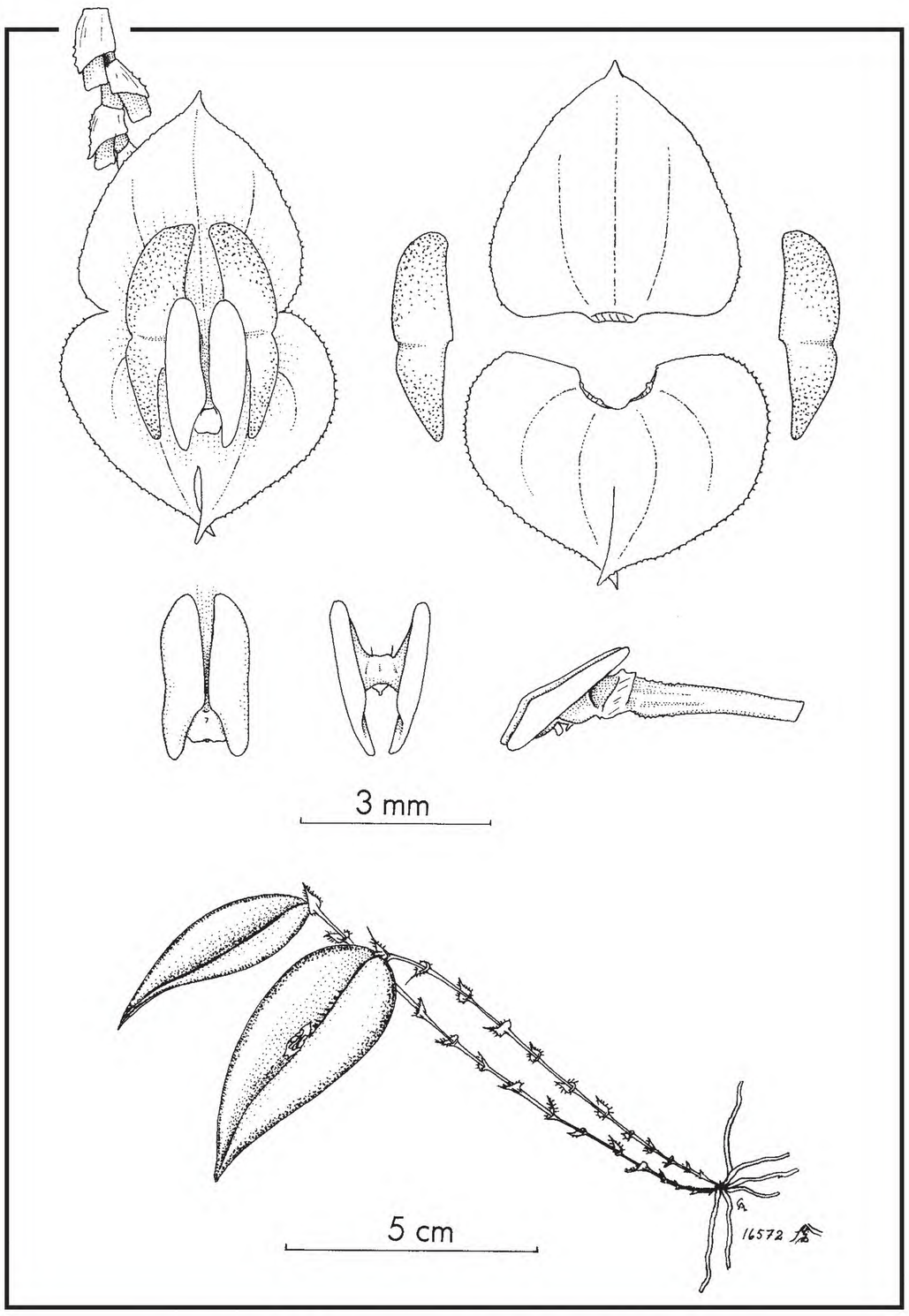



Fig. 261. Lepanthes skeleton

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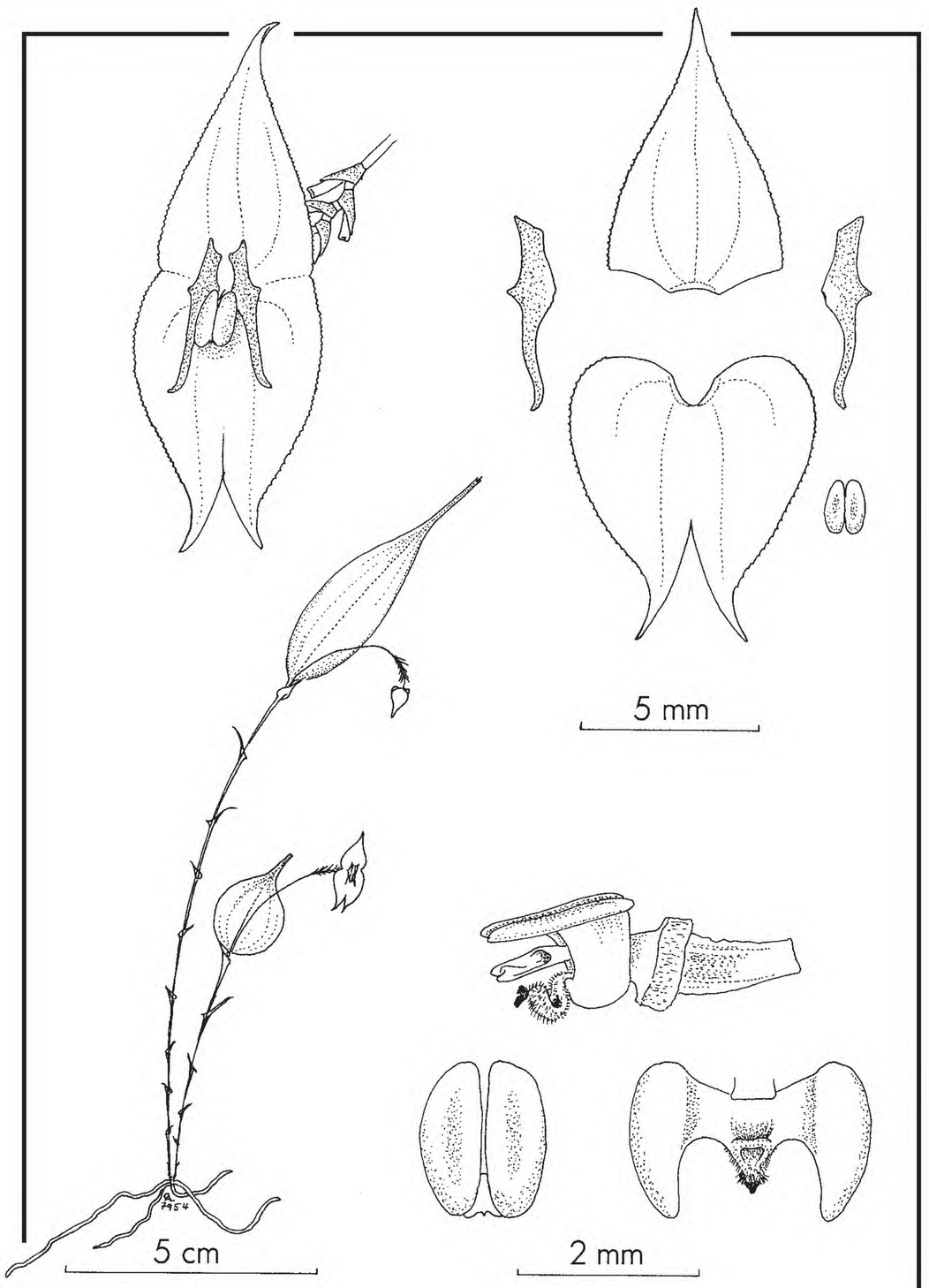


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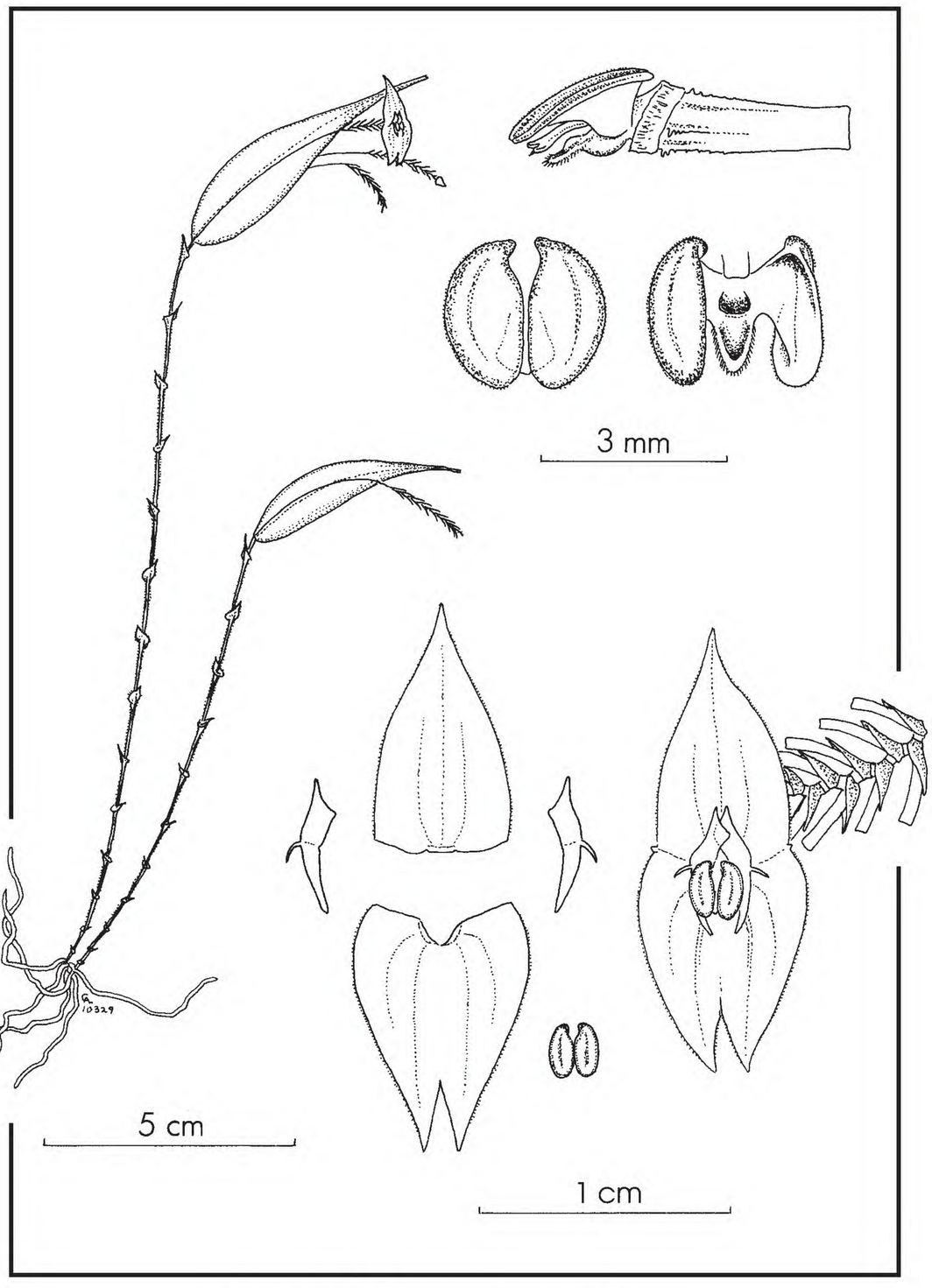


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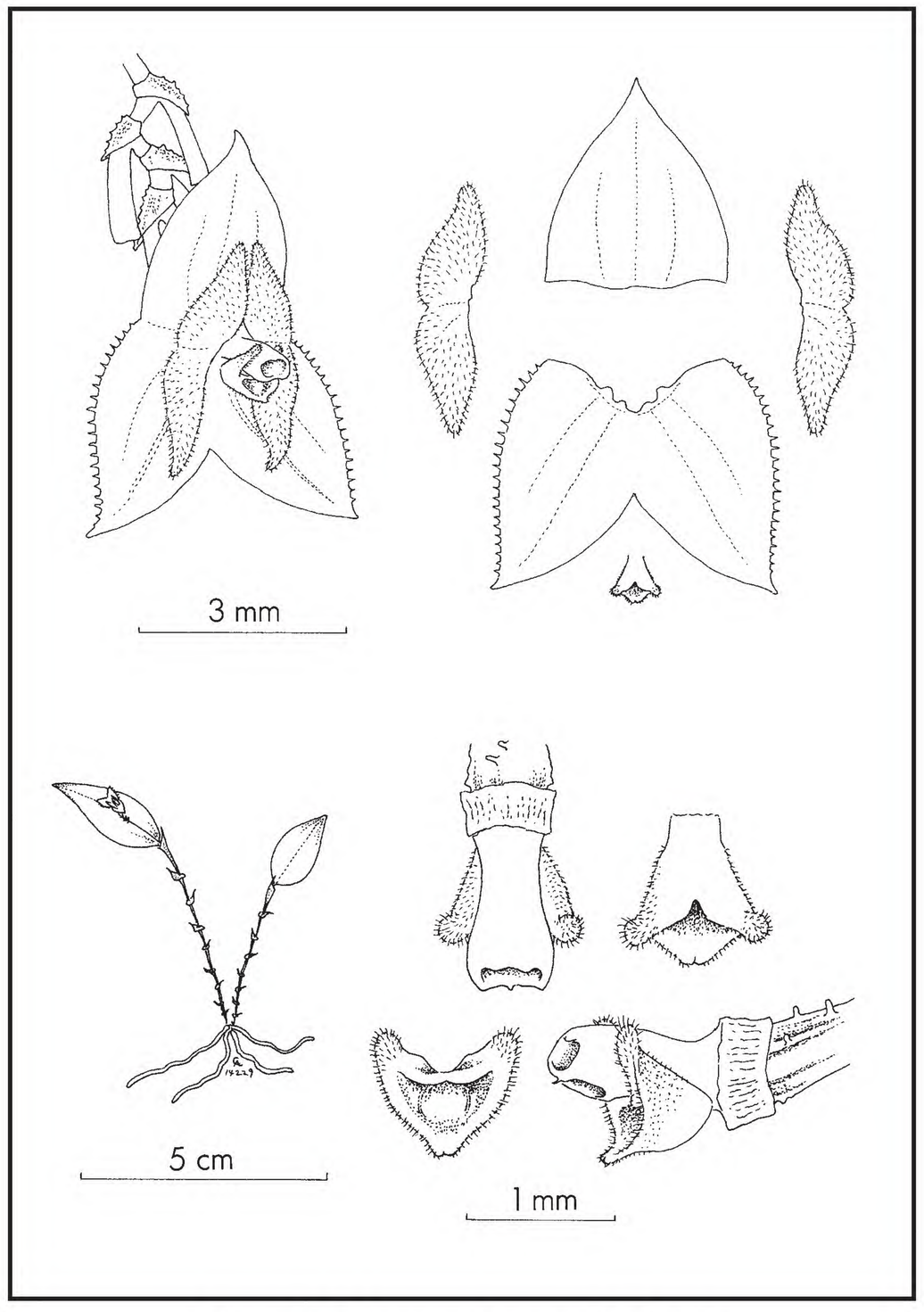


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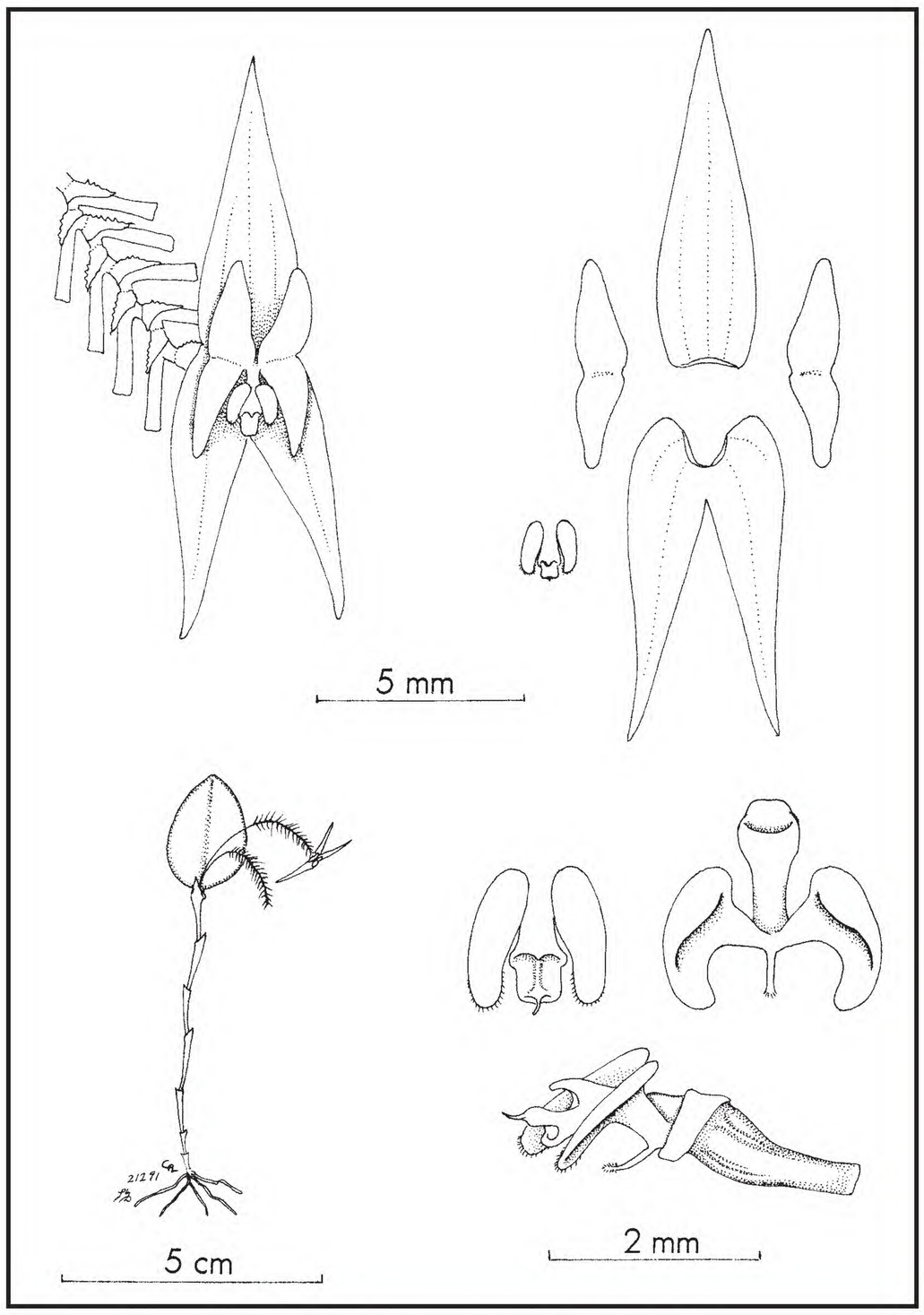


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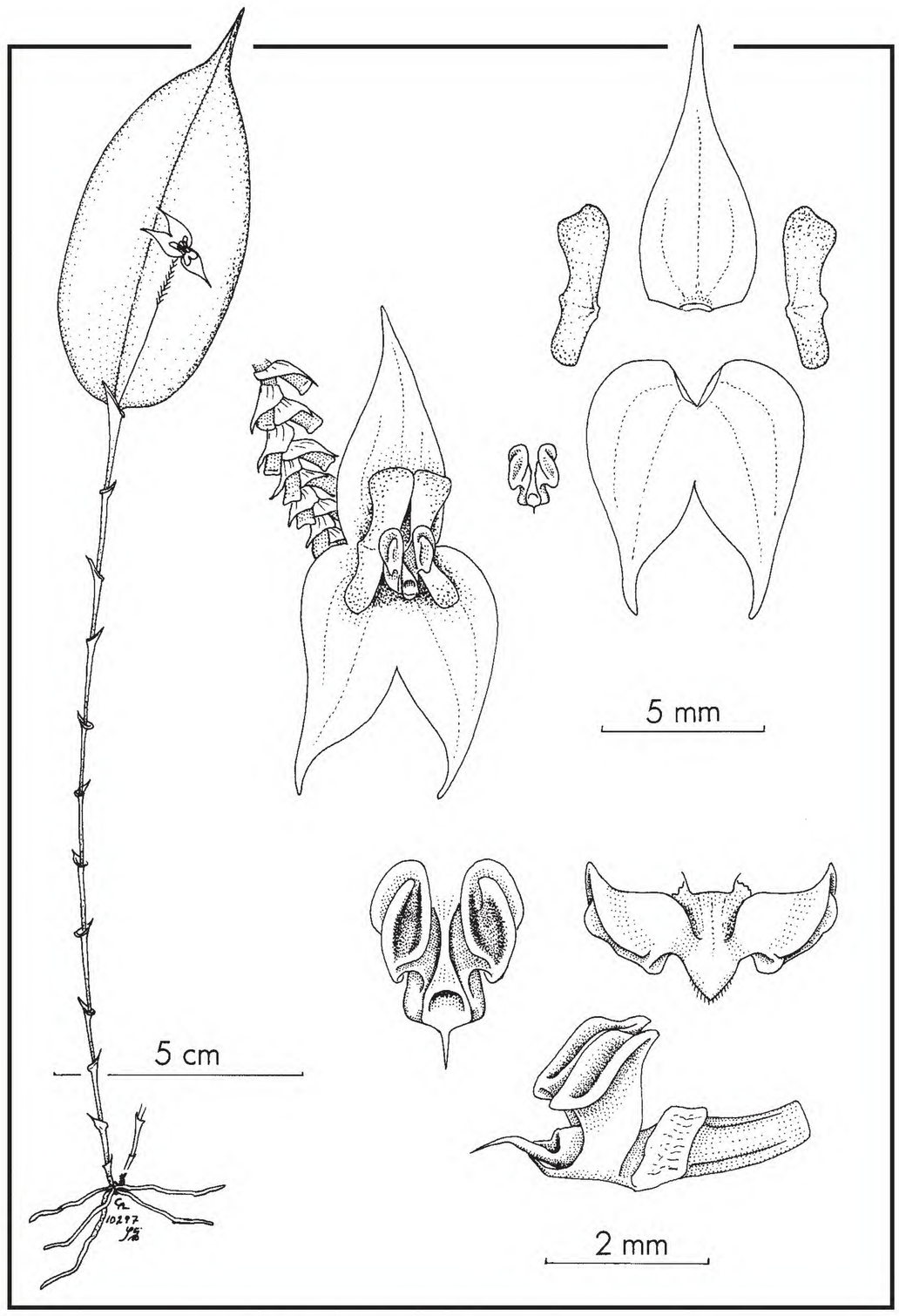


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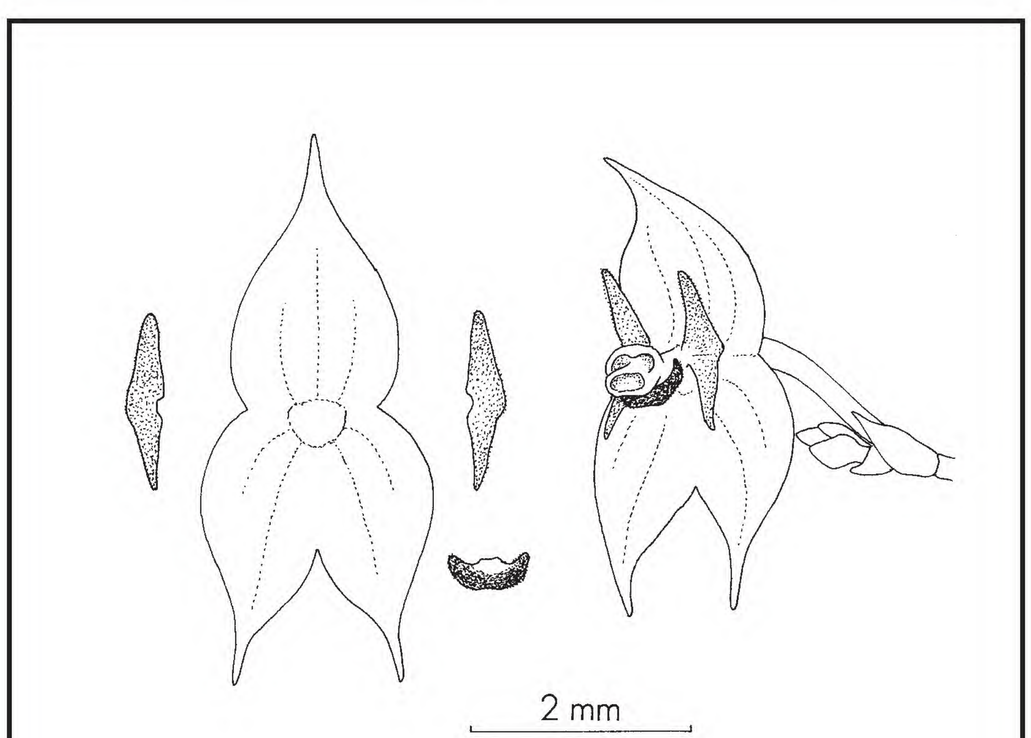


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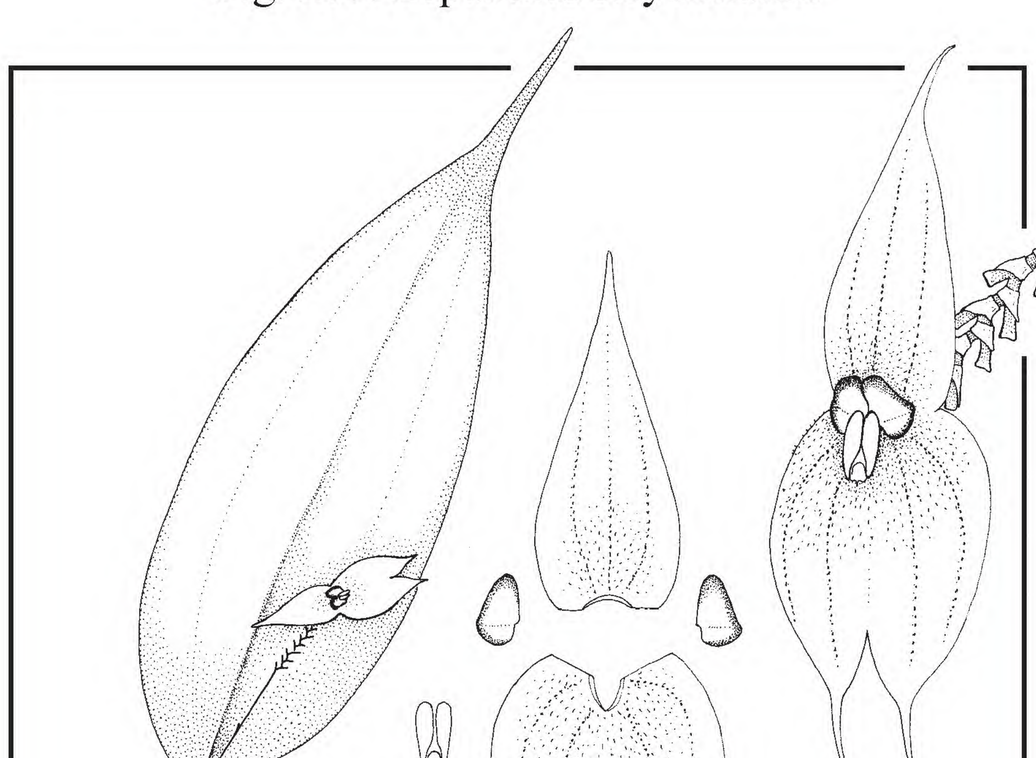


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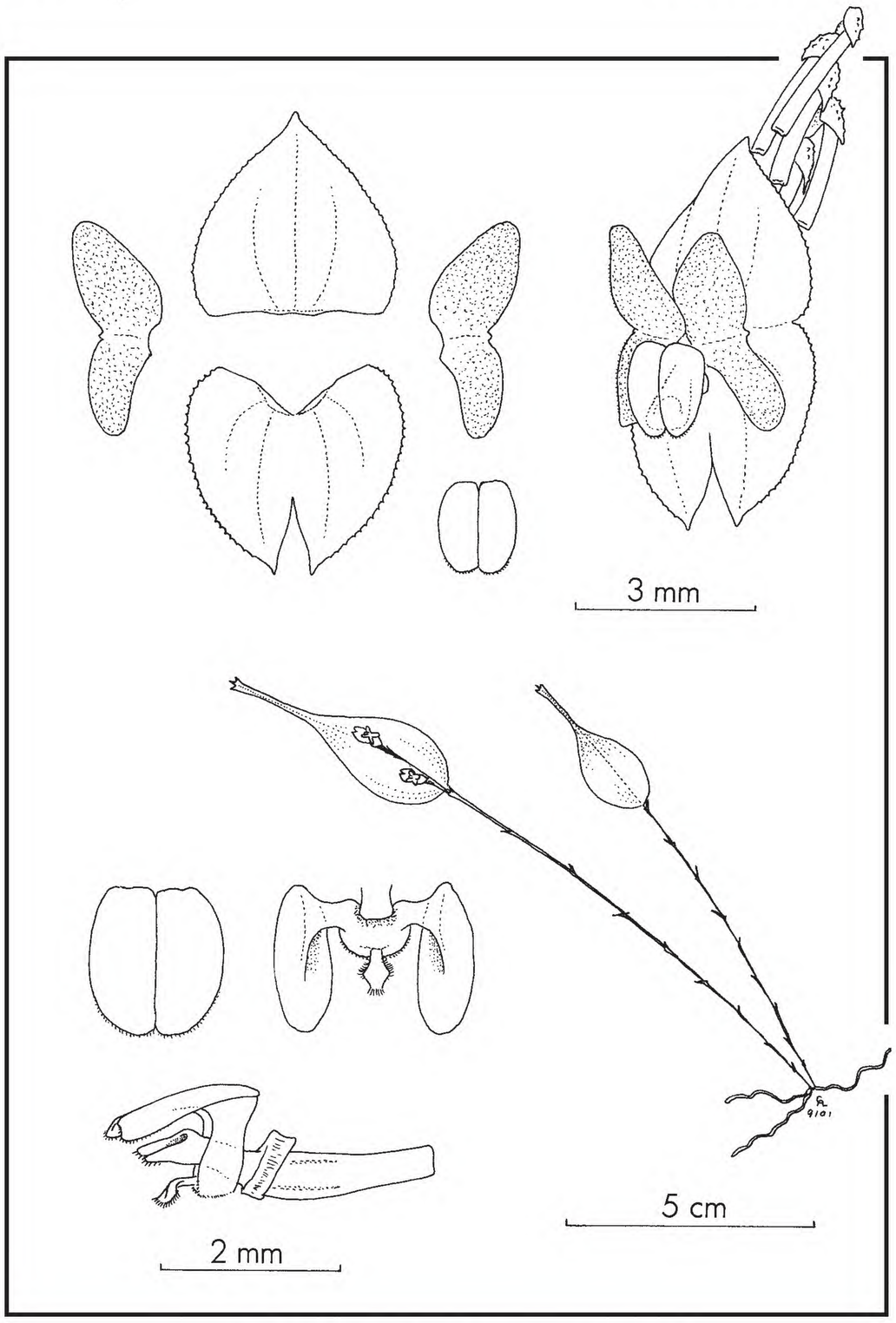


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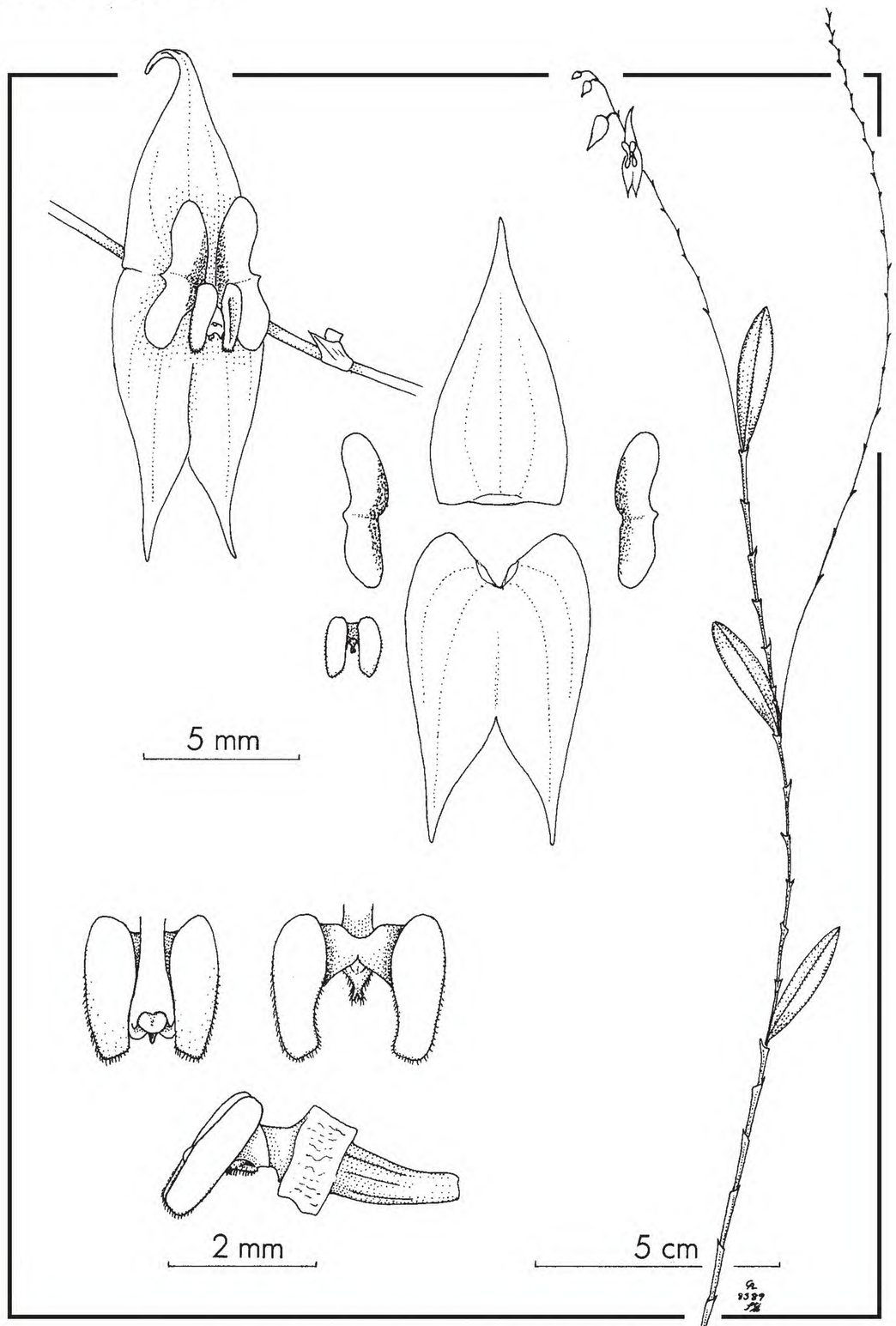


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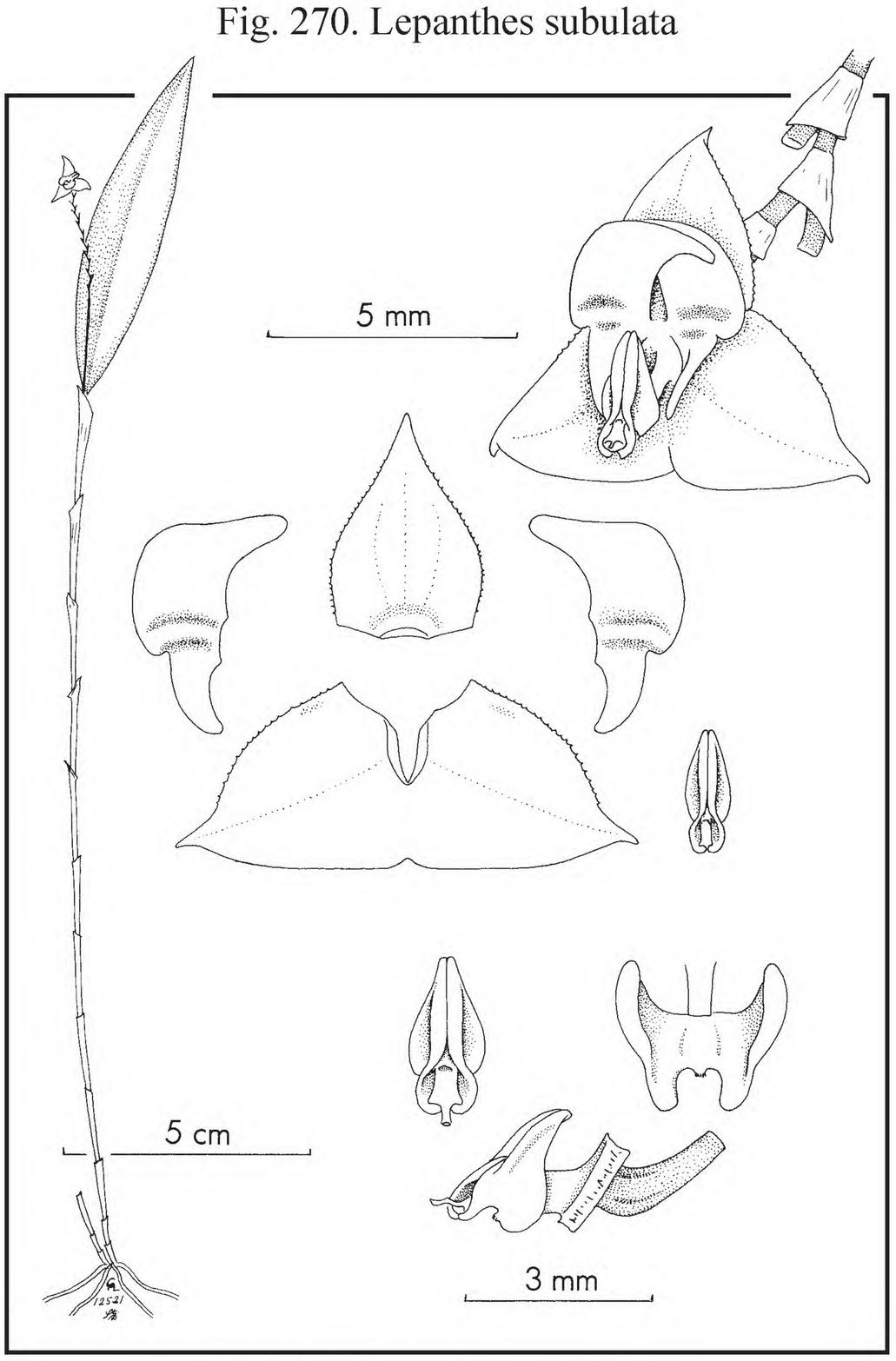


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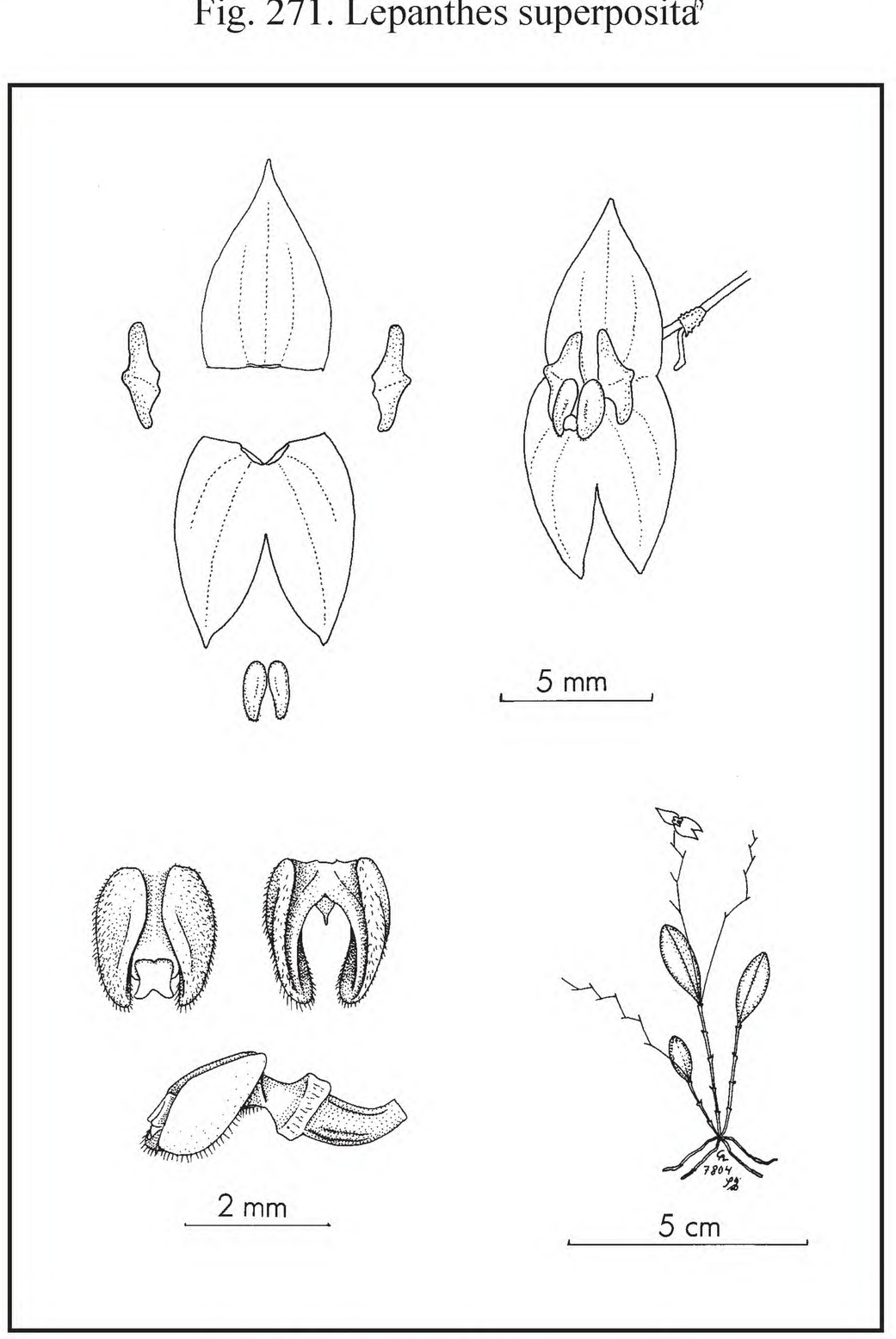


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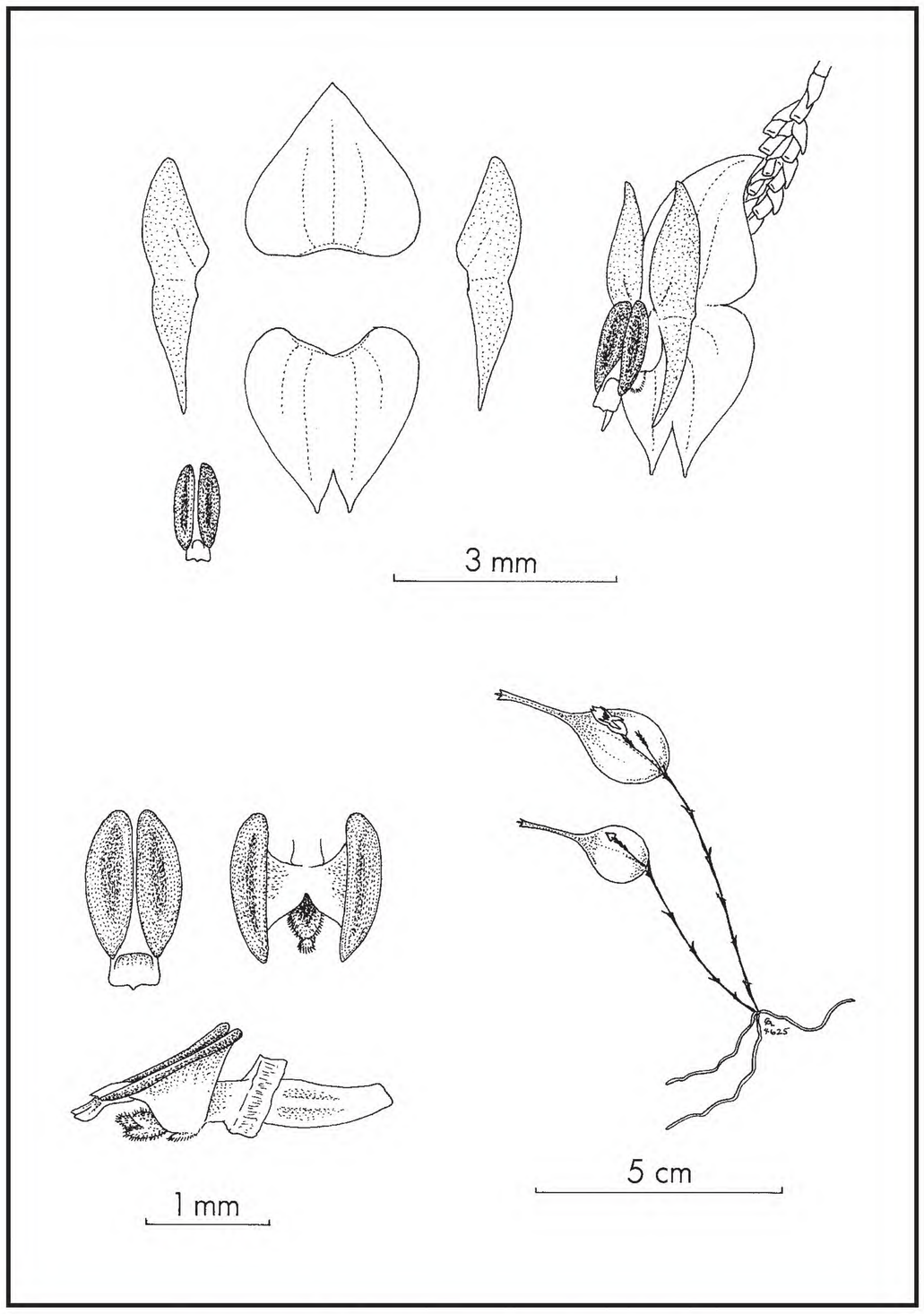


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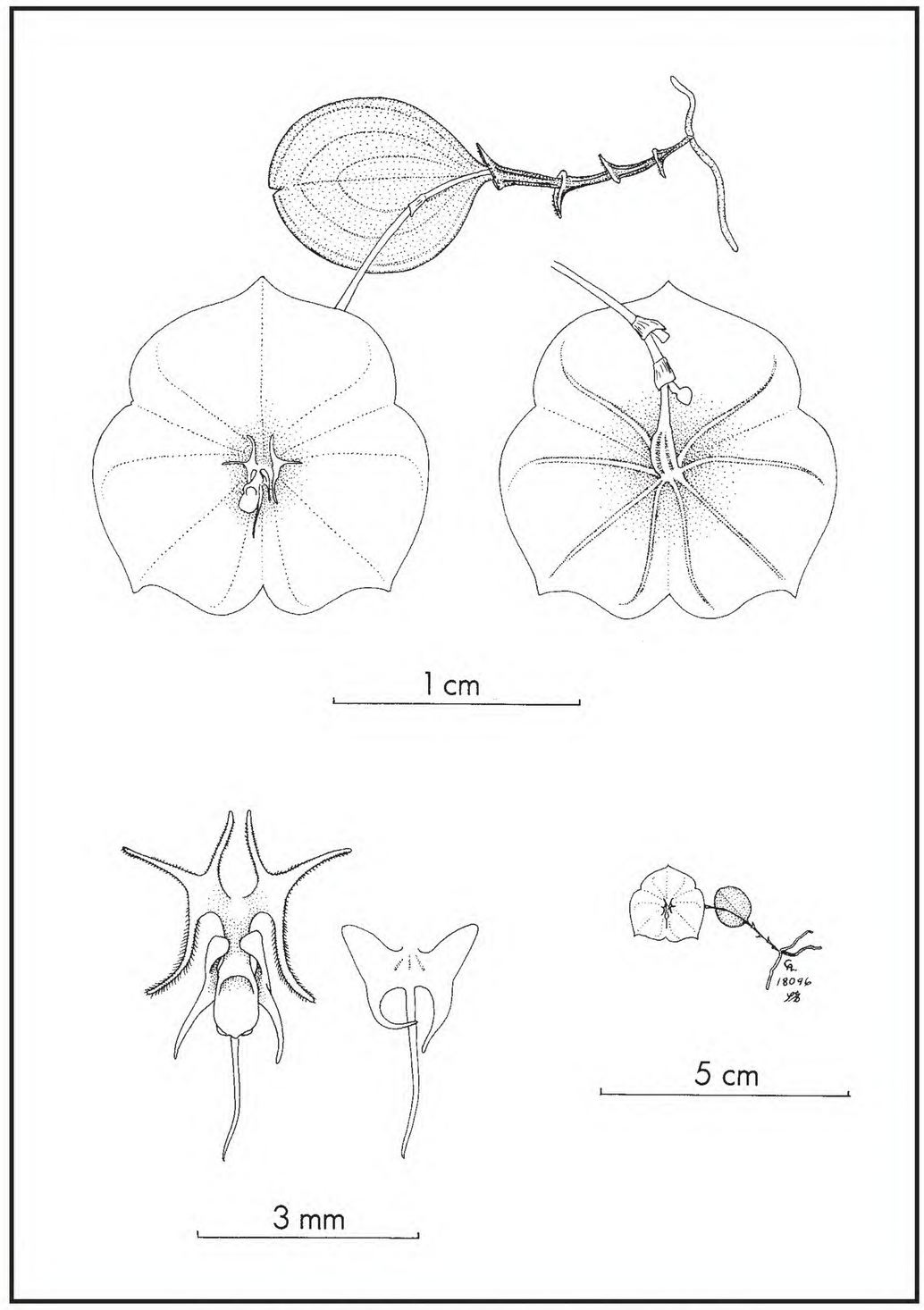


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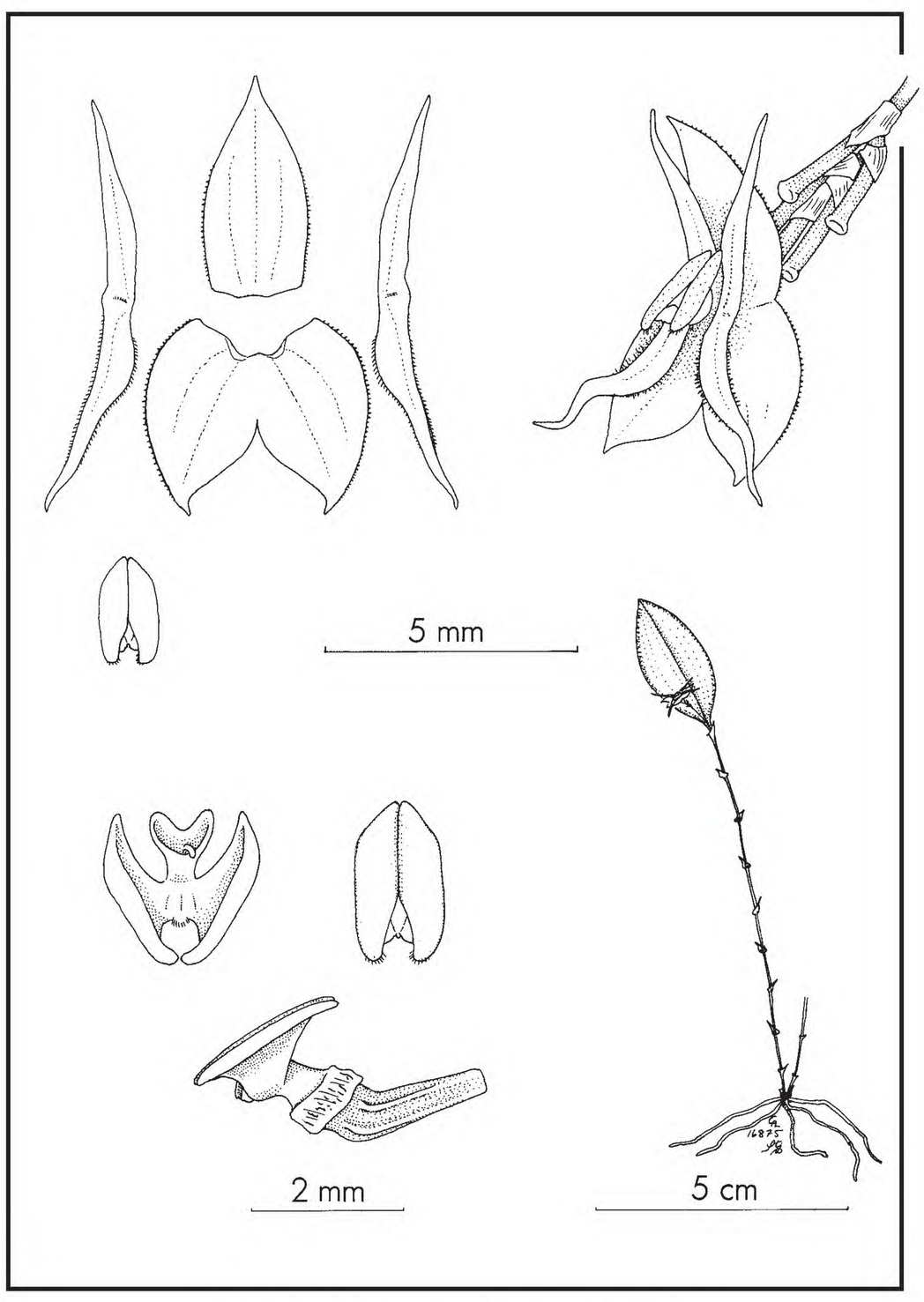


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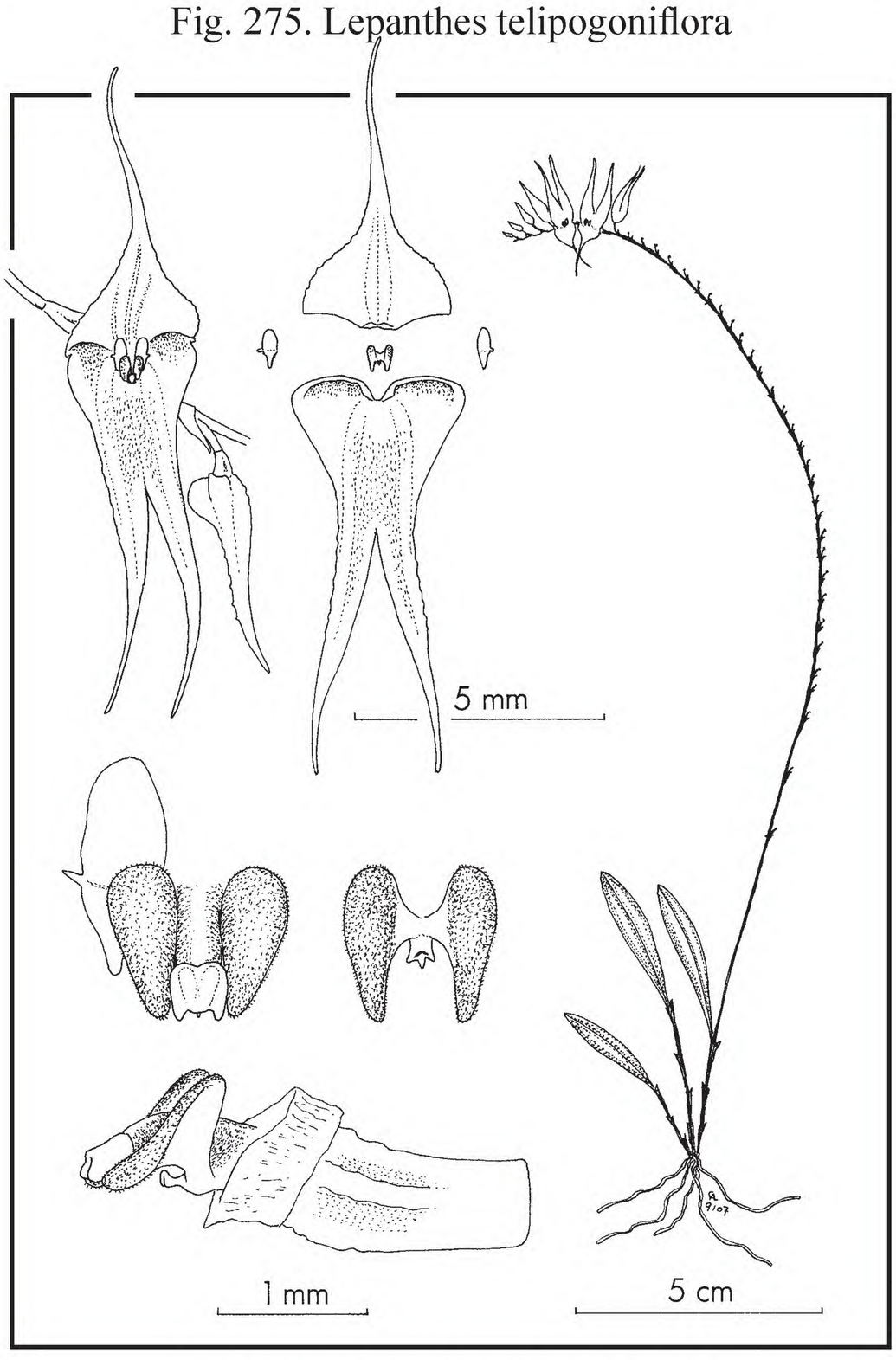


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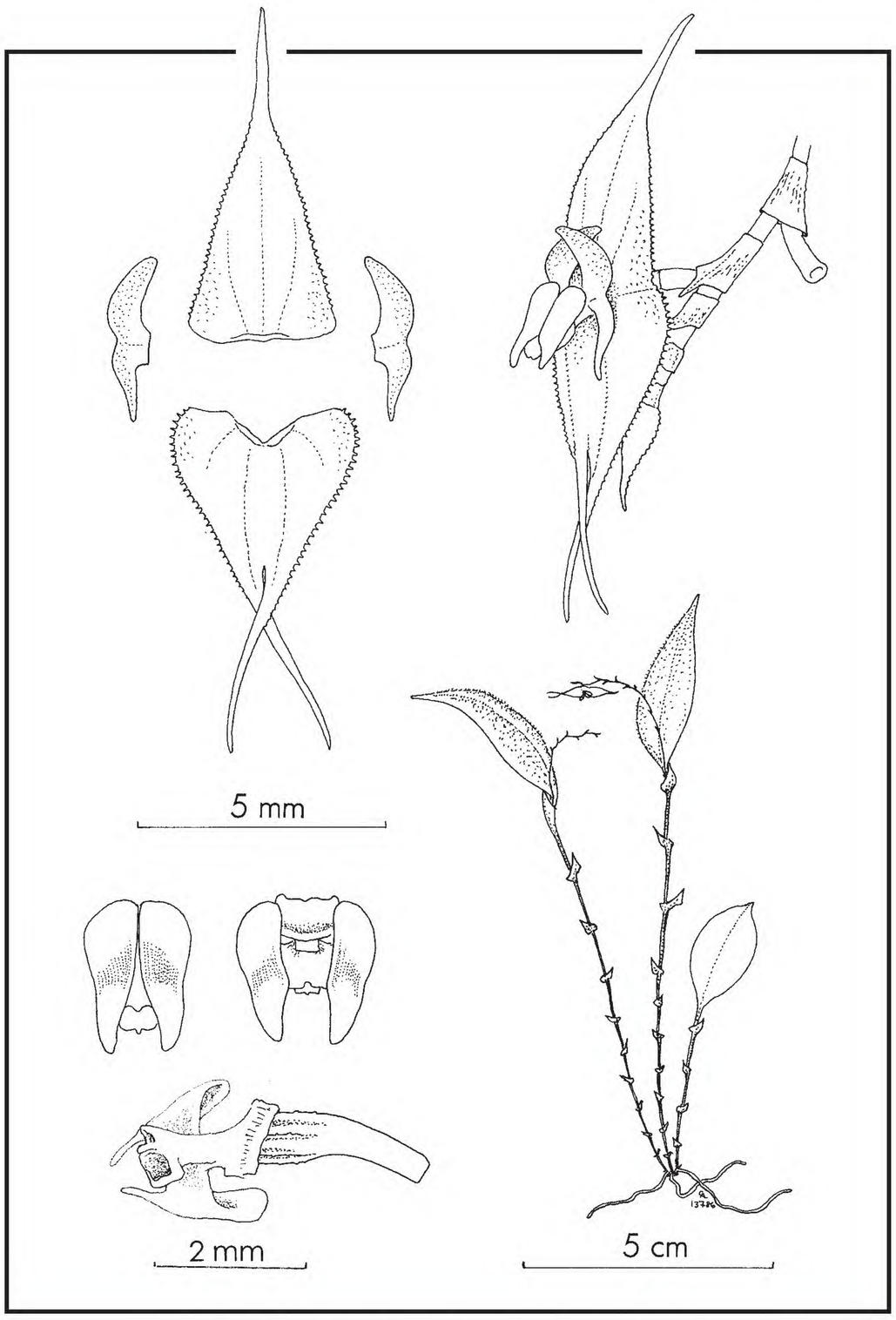


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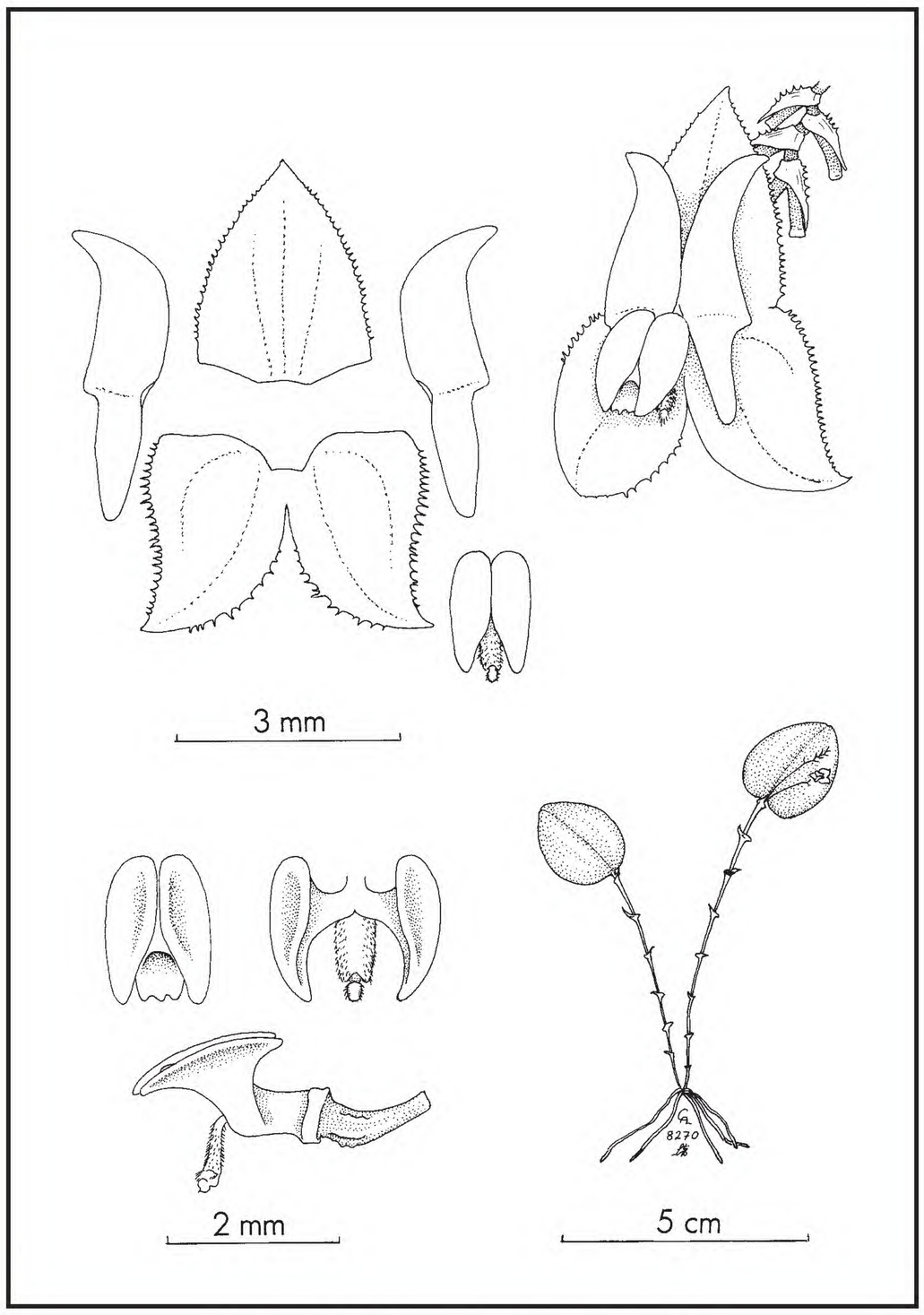


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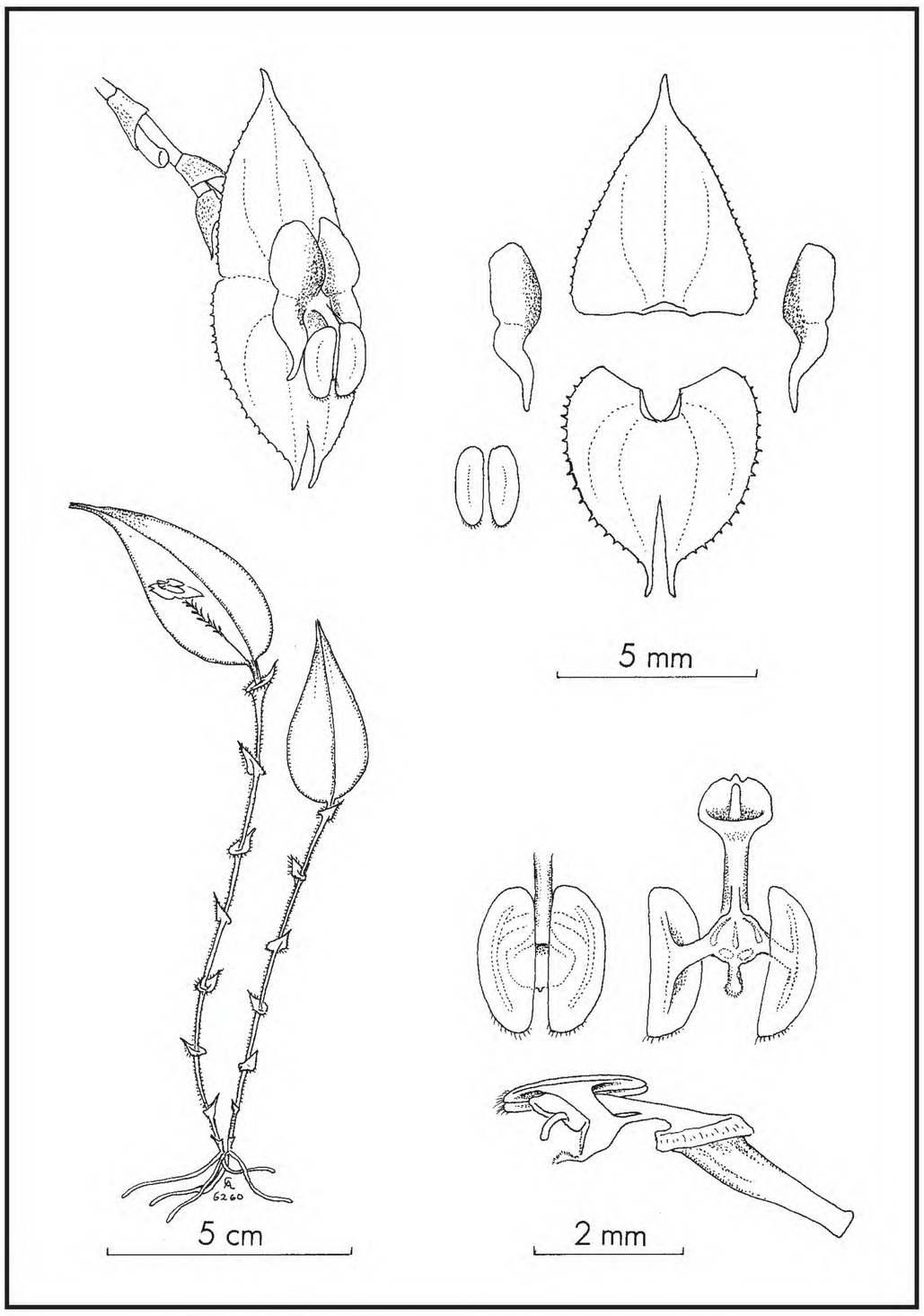


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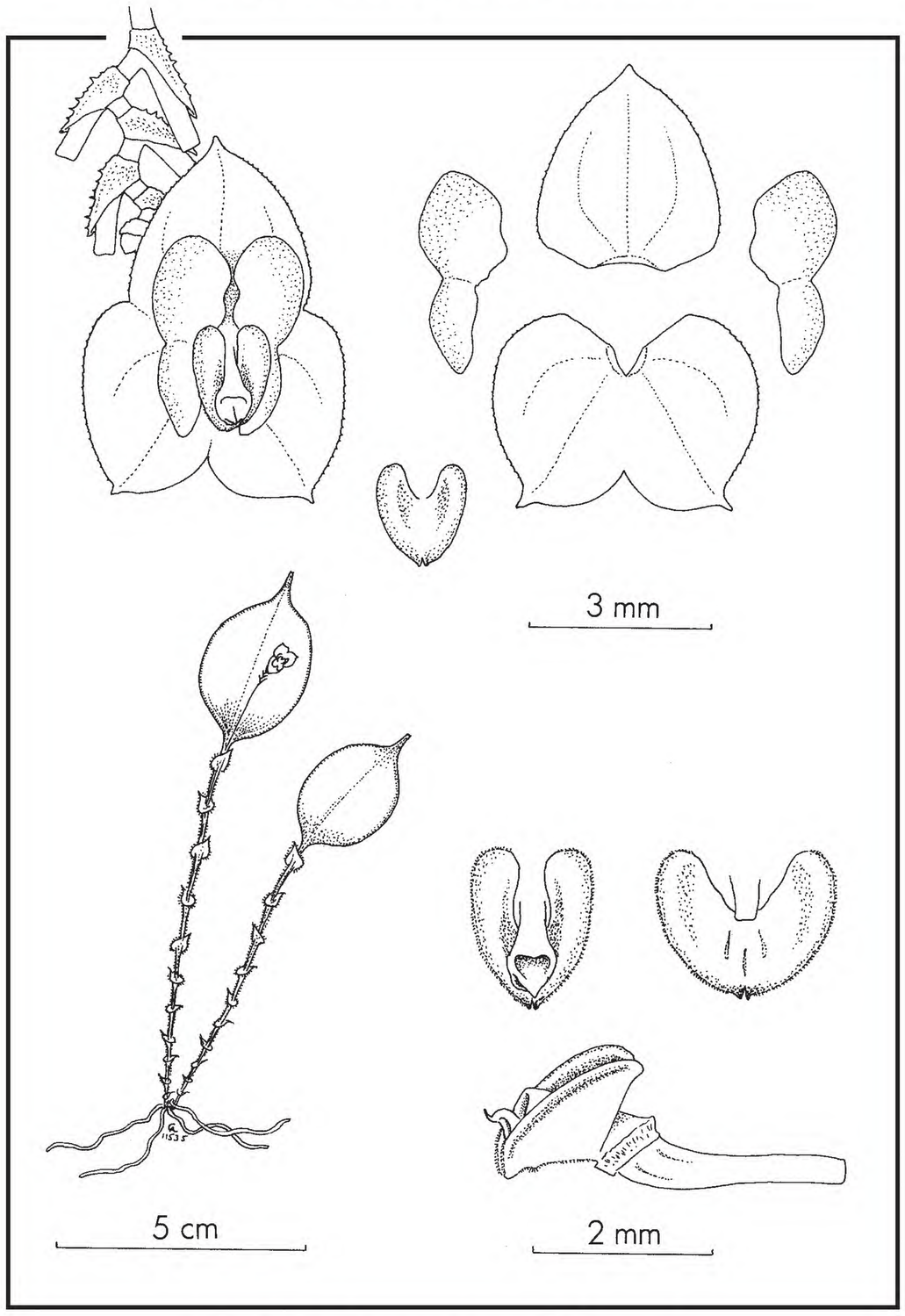


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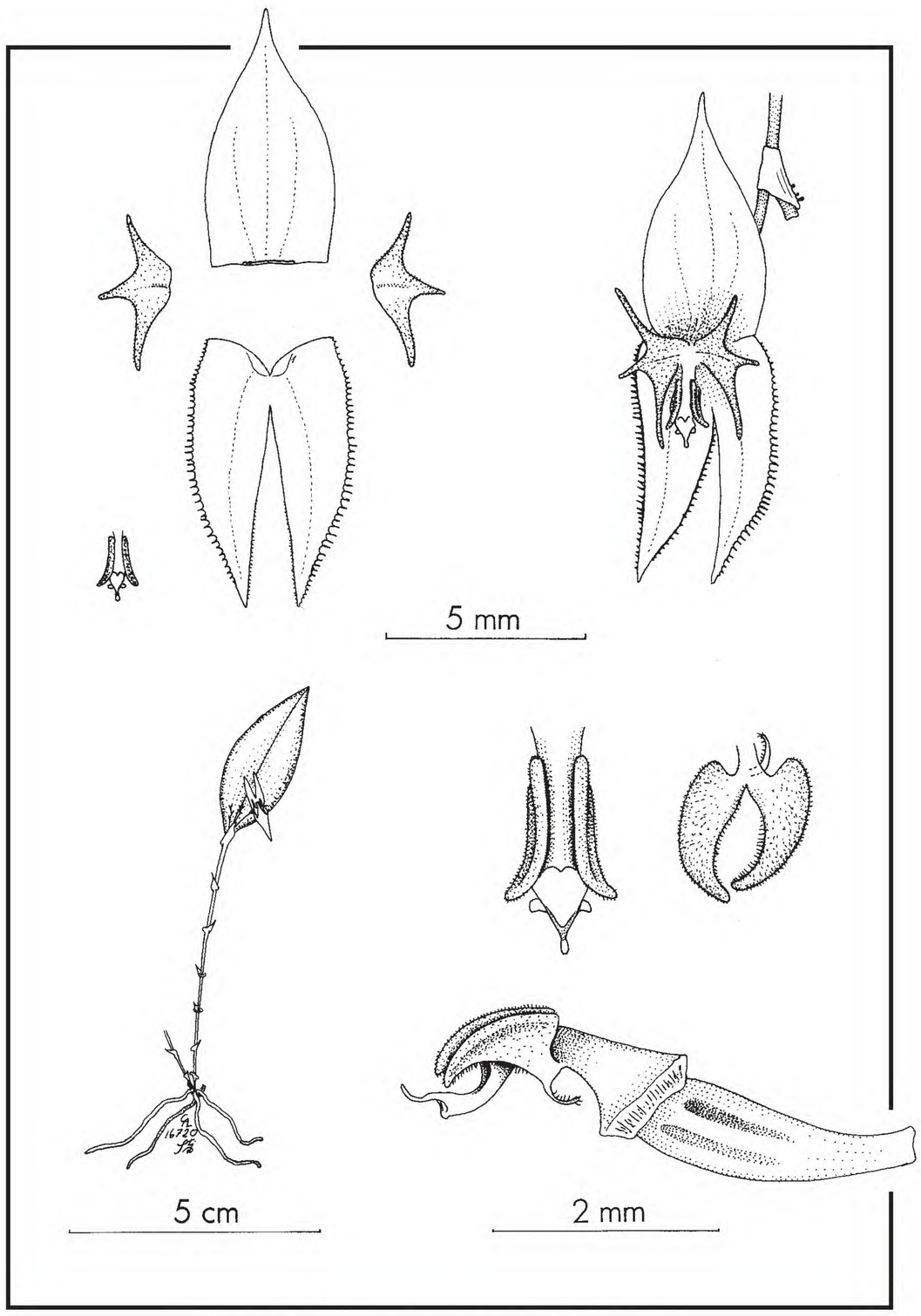


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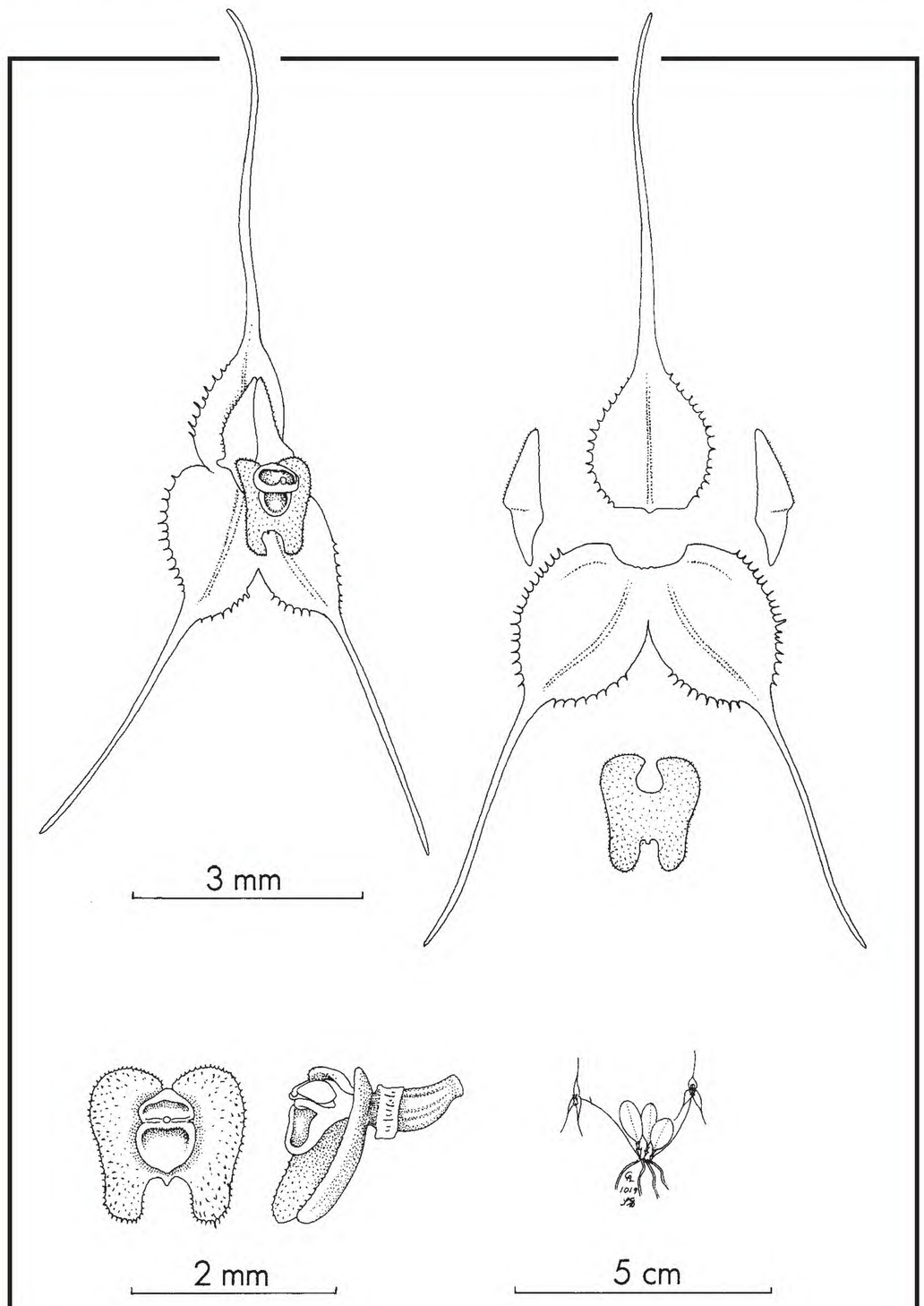


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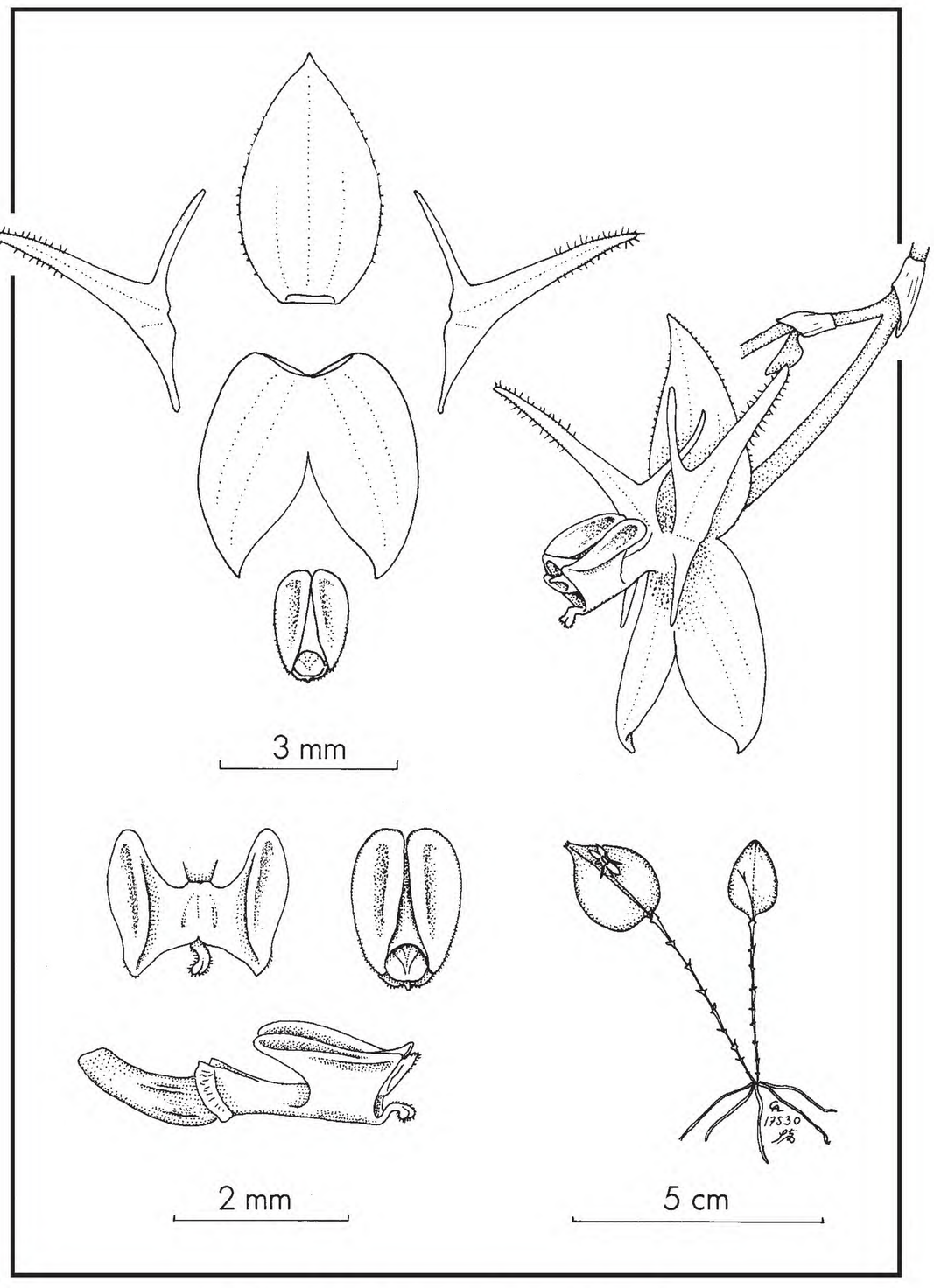


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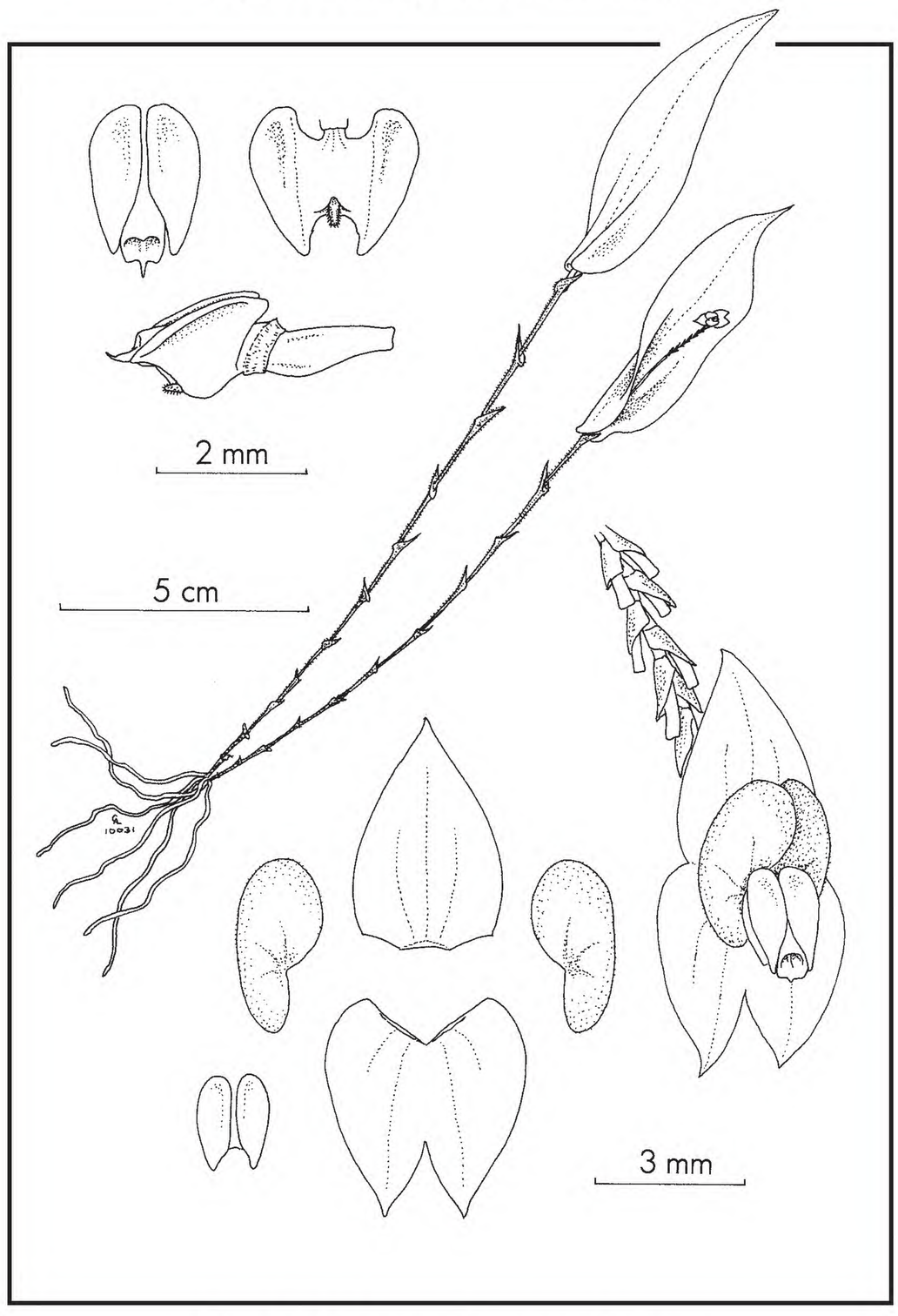


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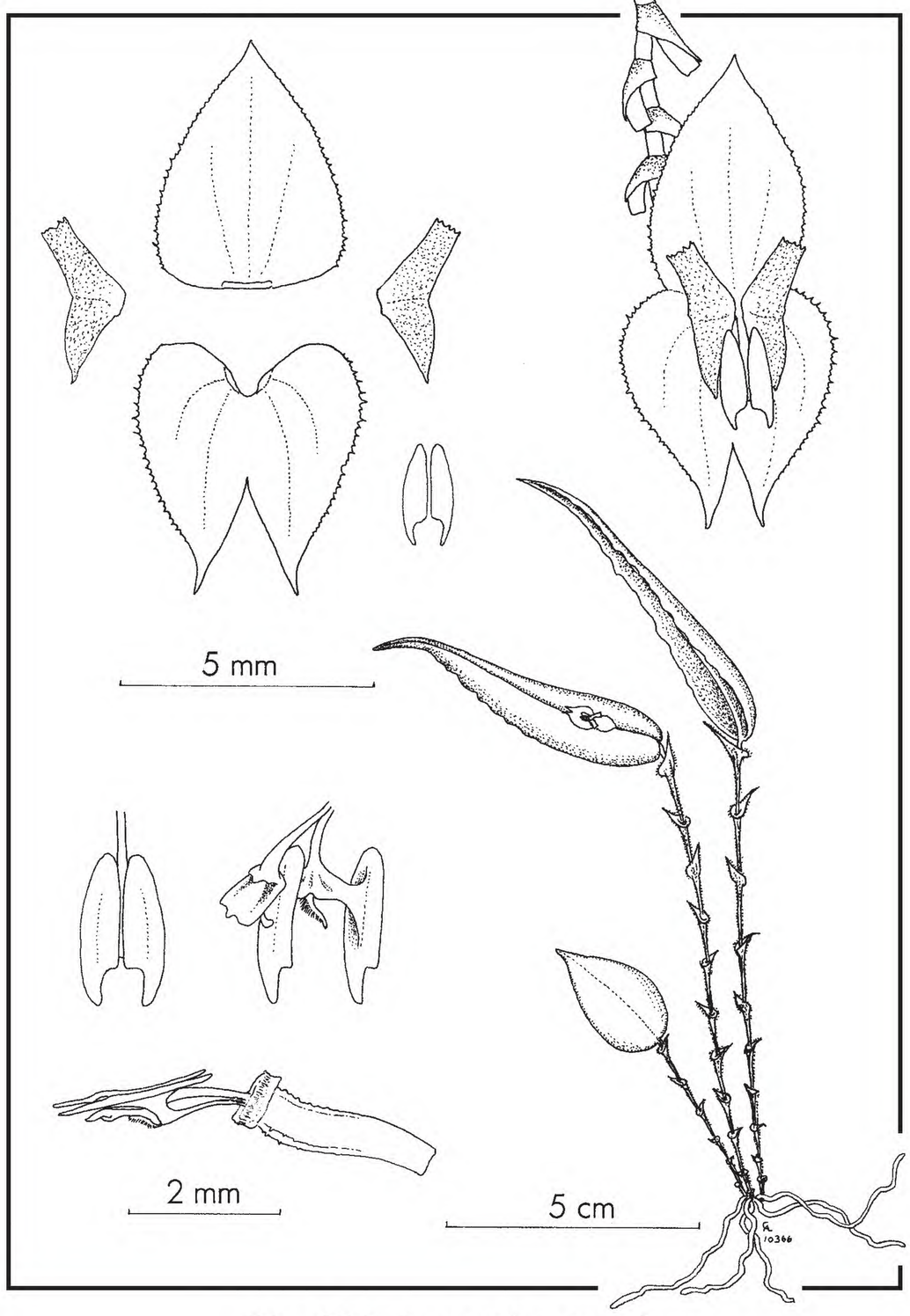


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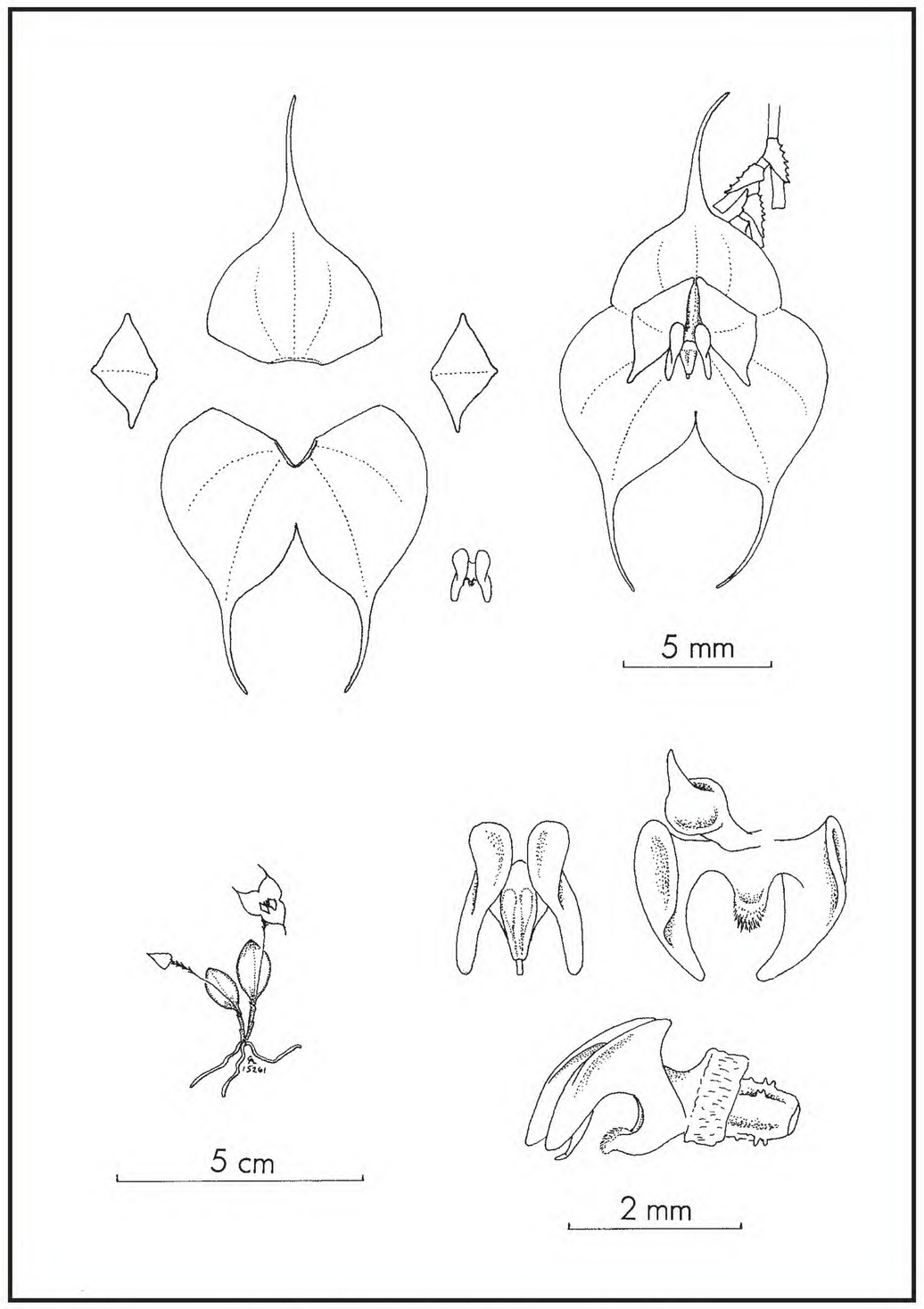


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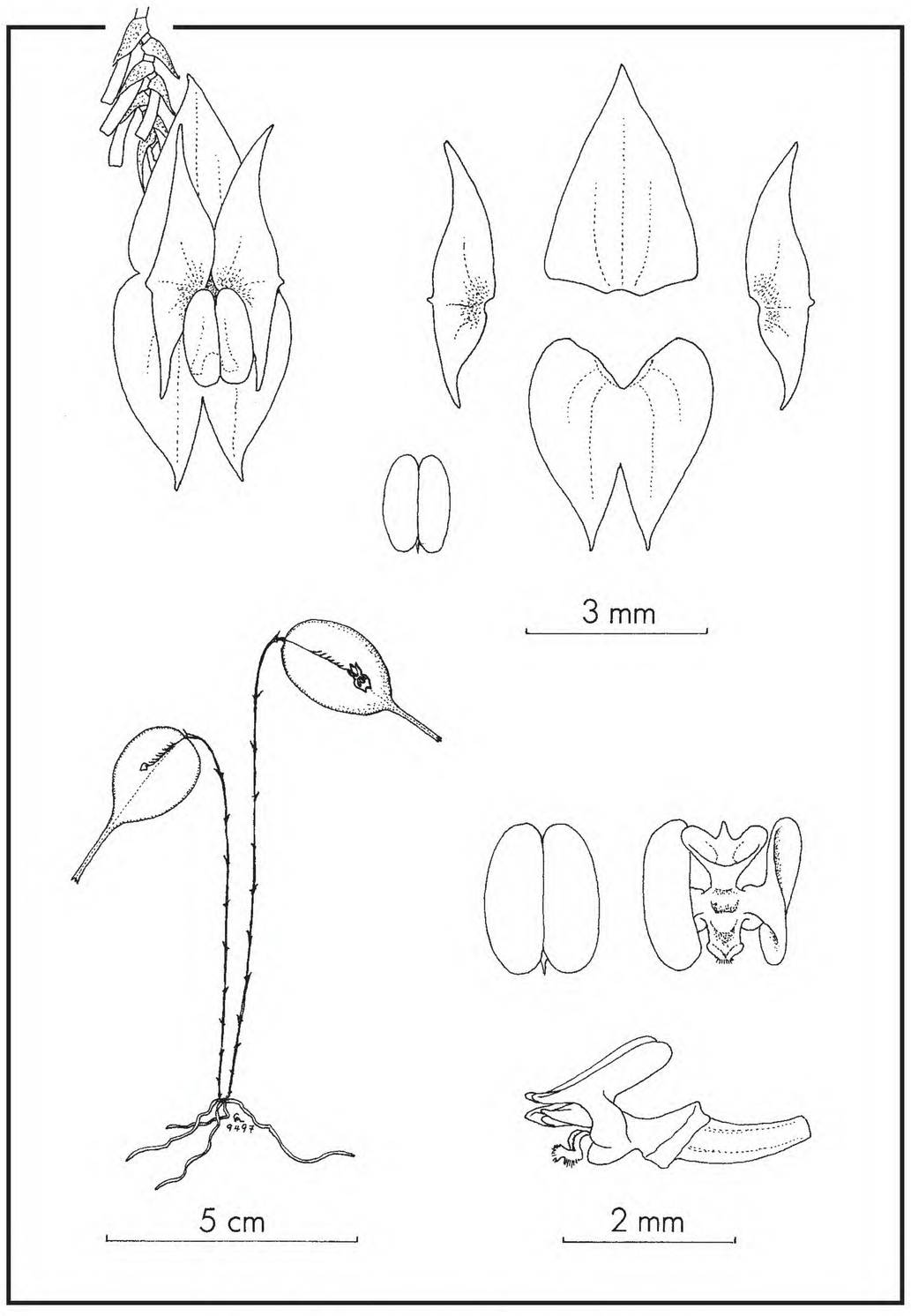


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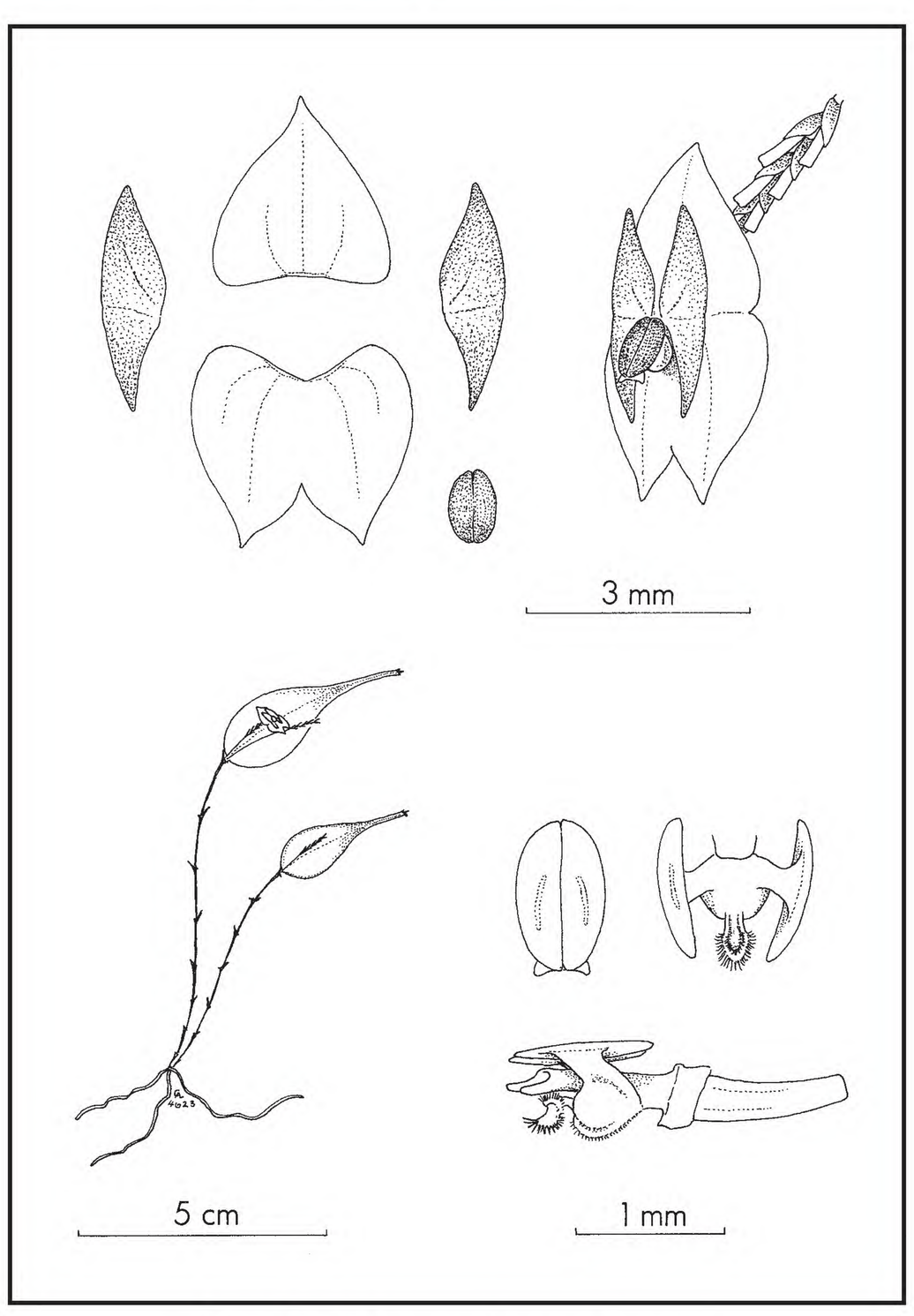


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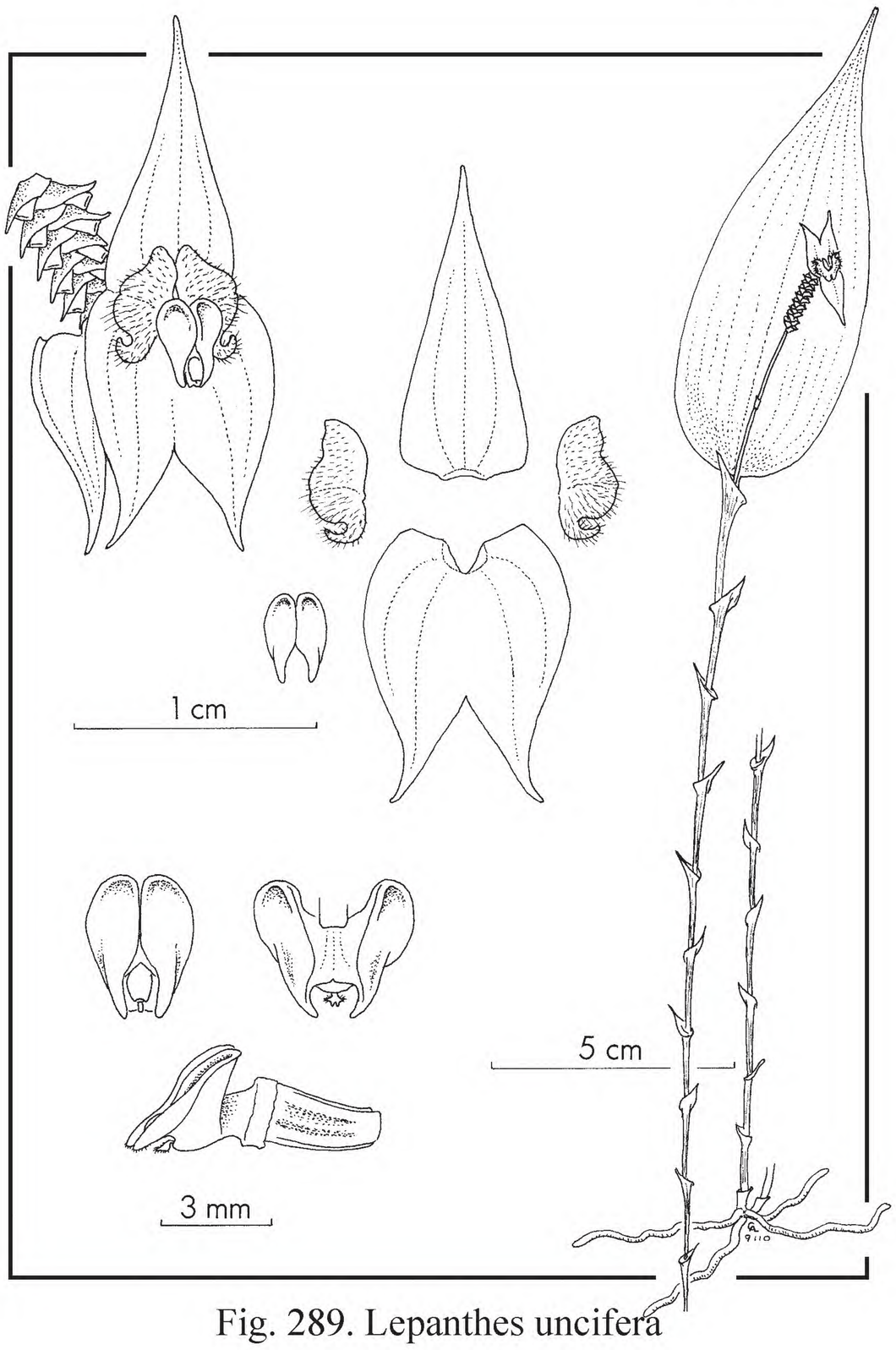


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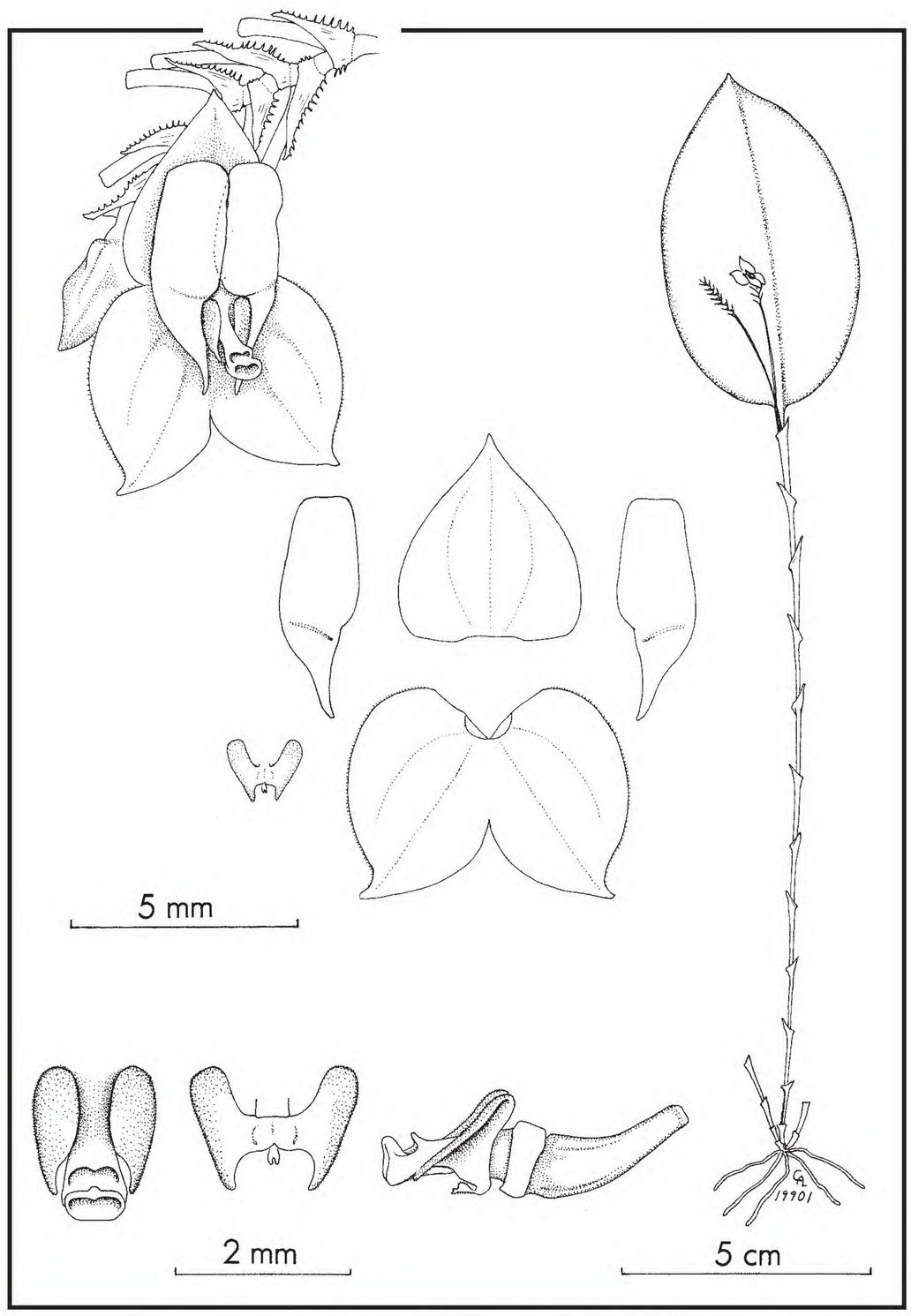


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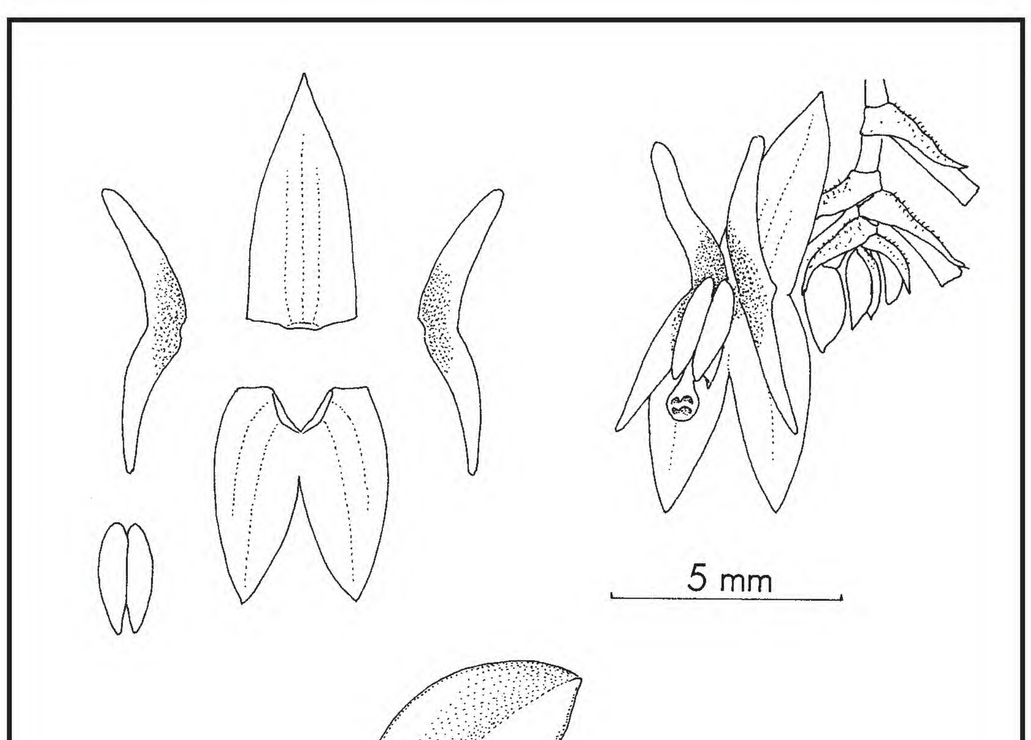


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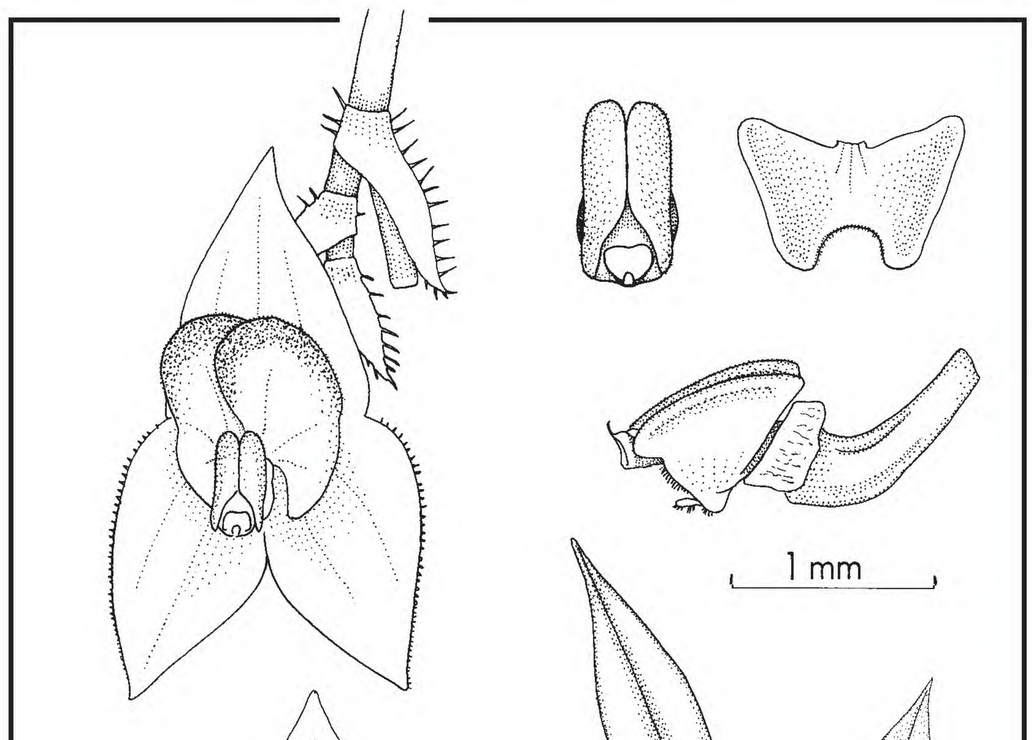


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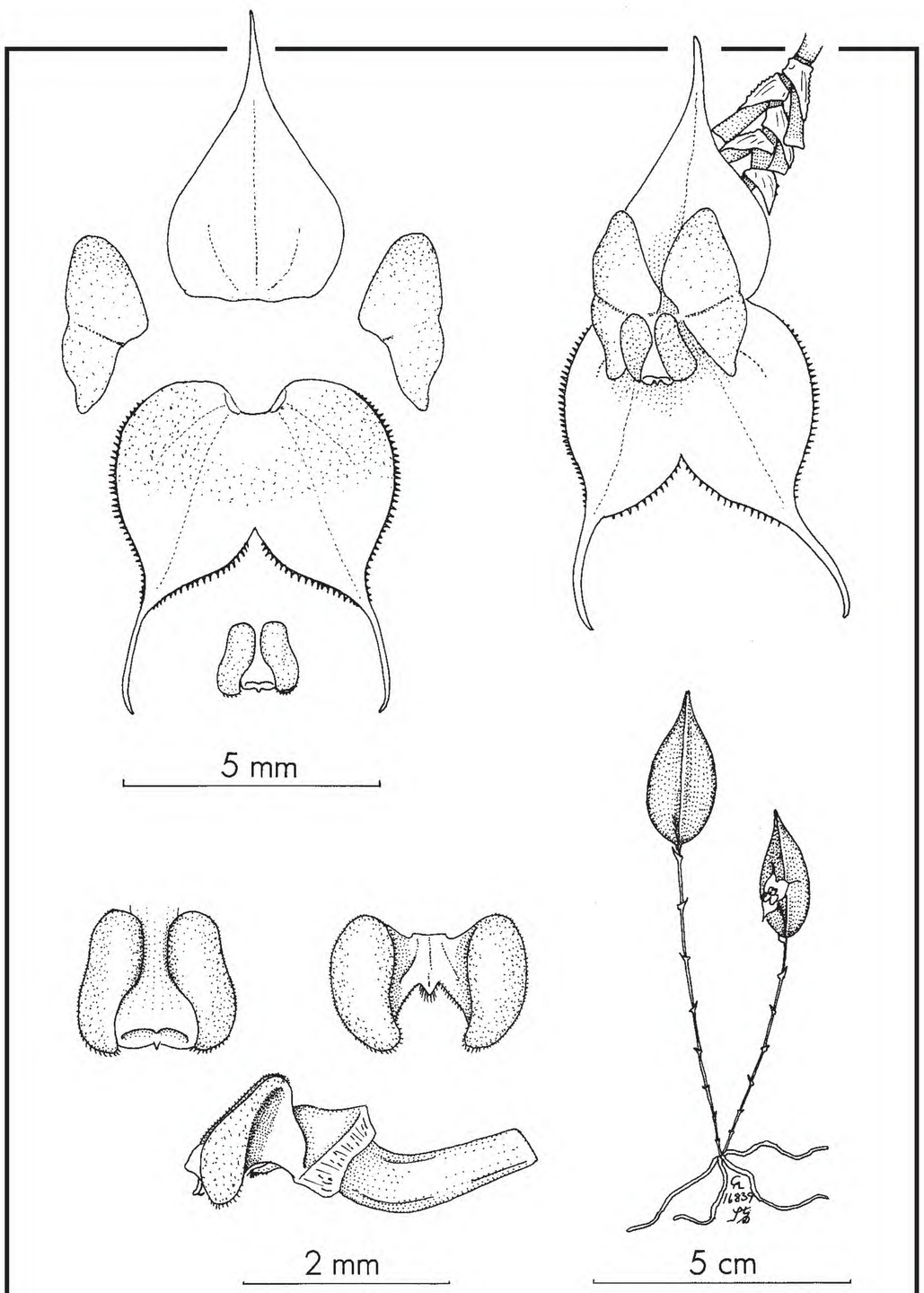


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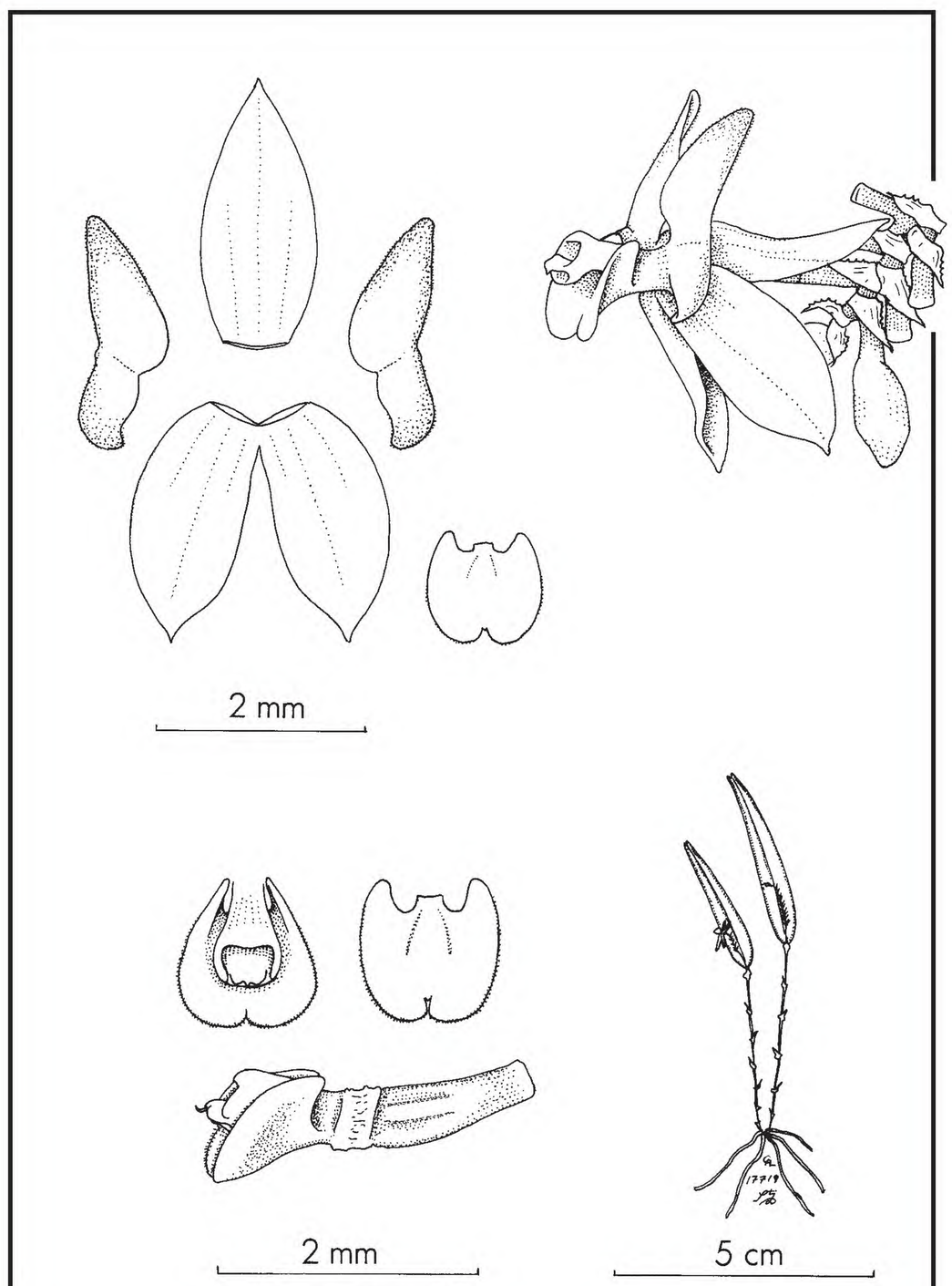


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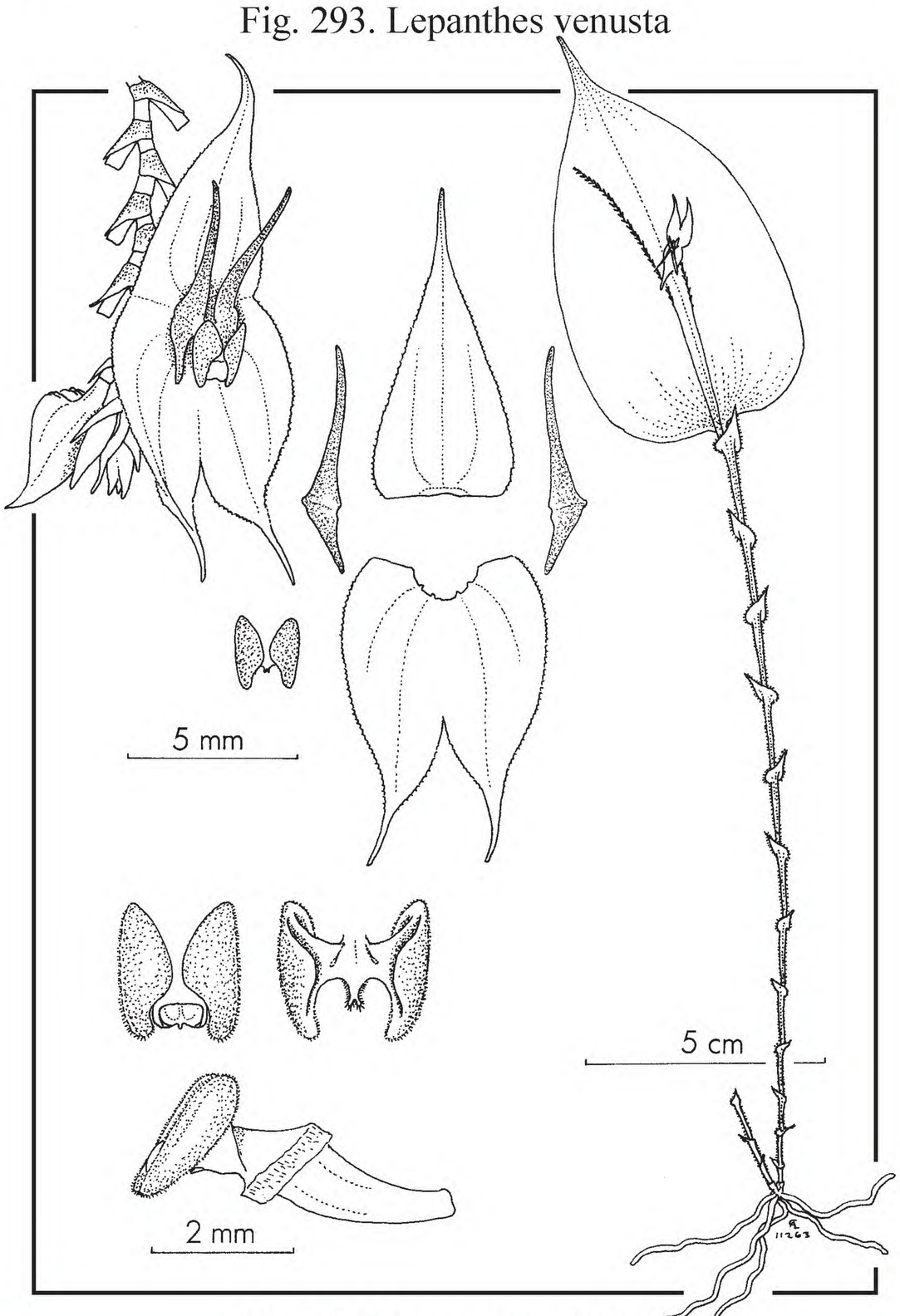


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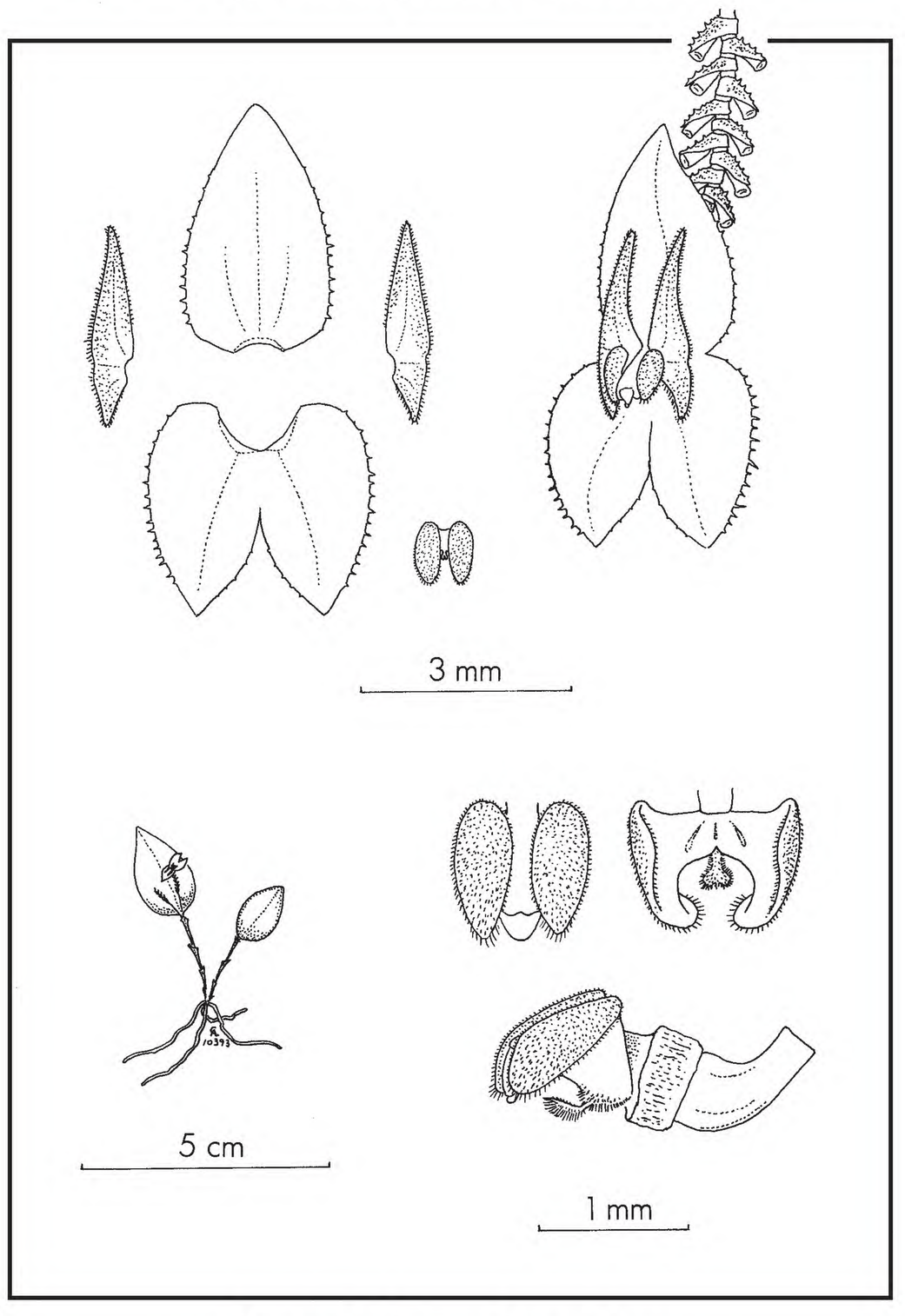


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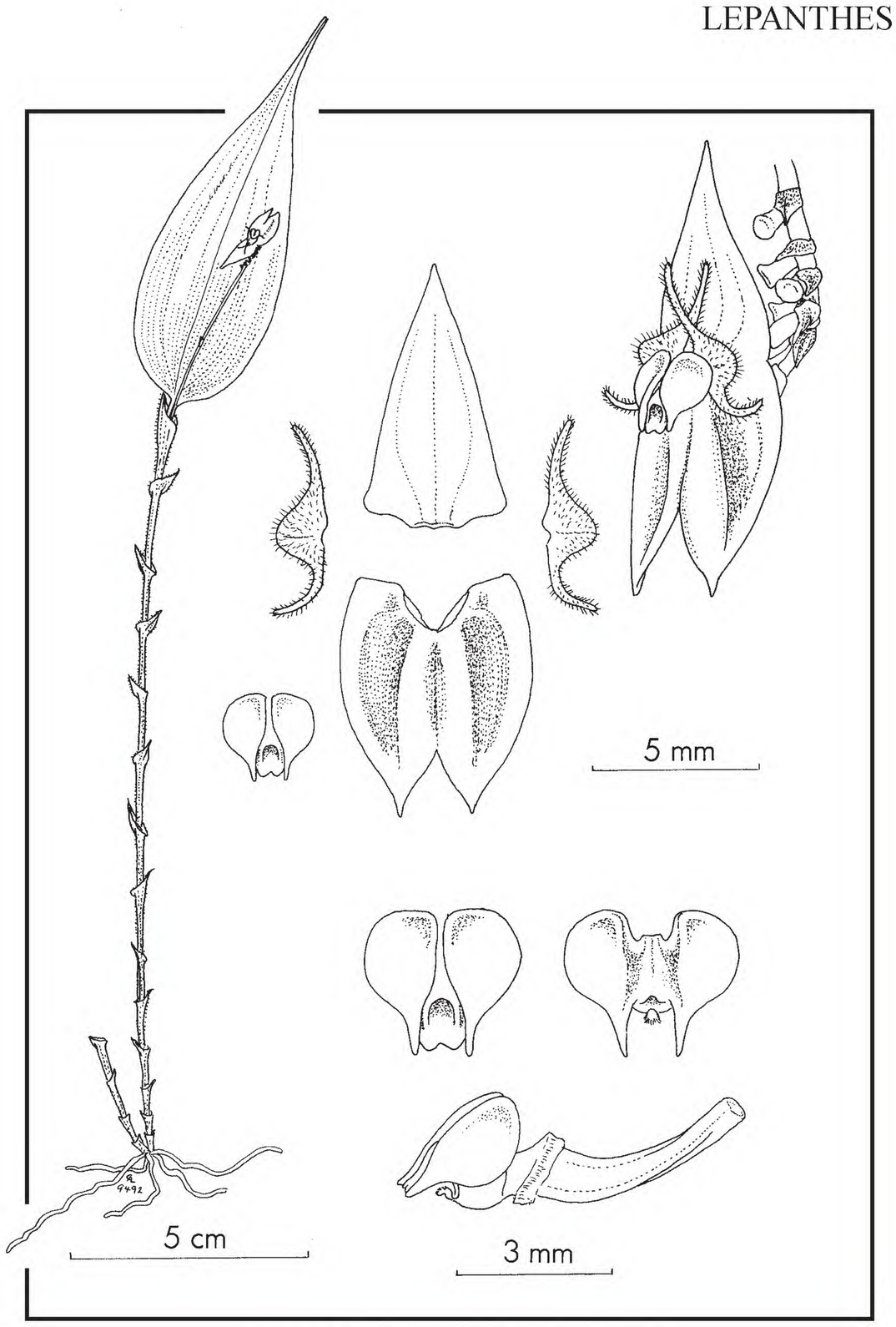


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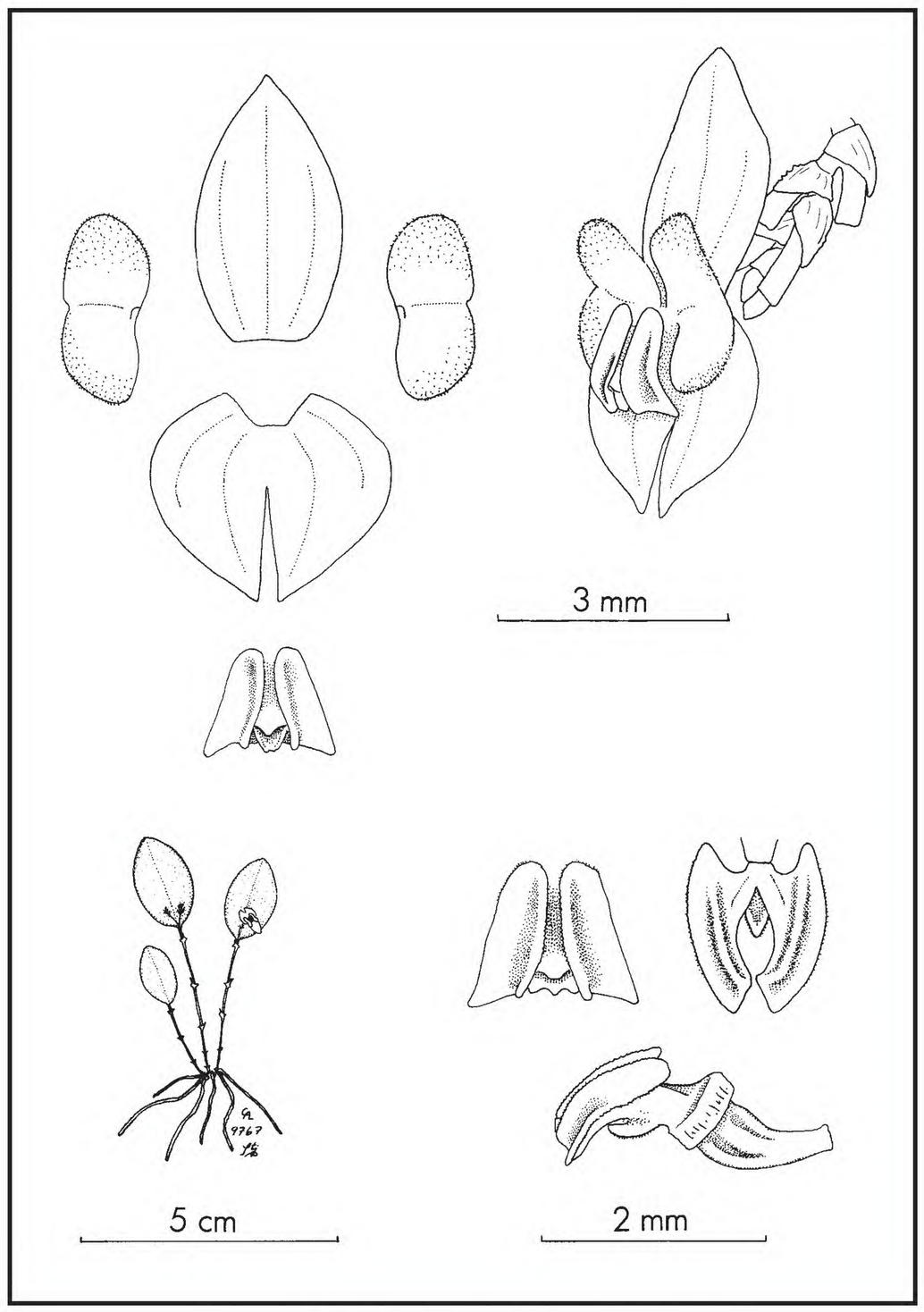


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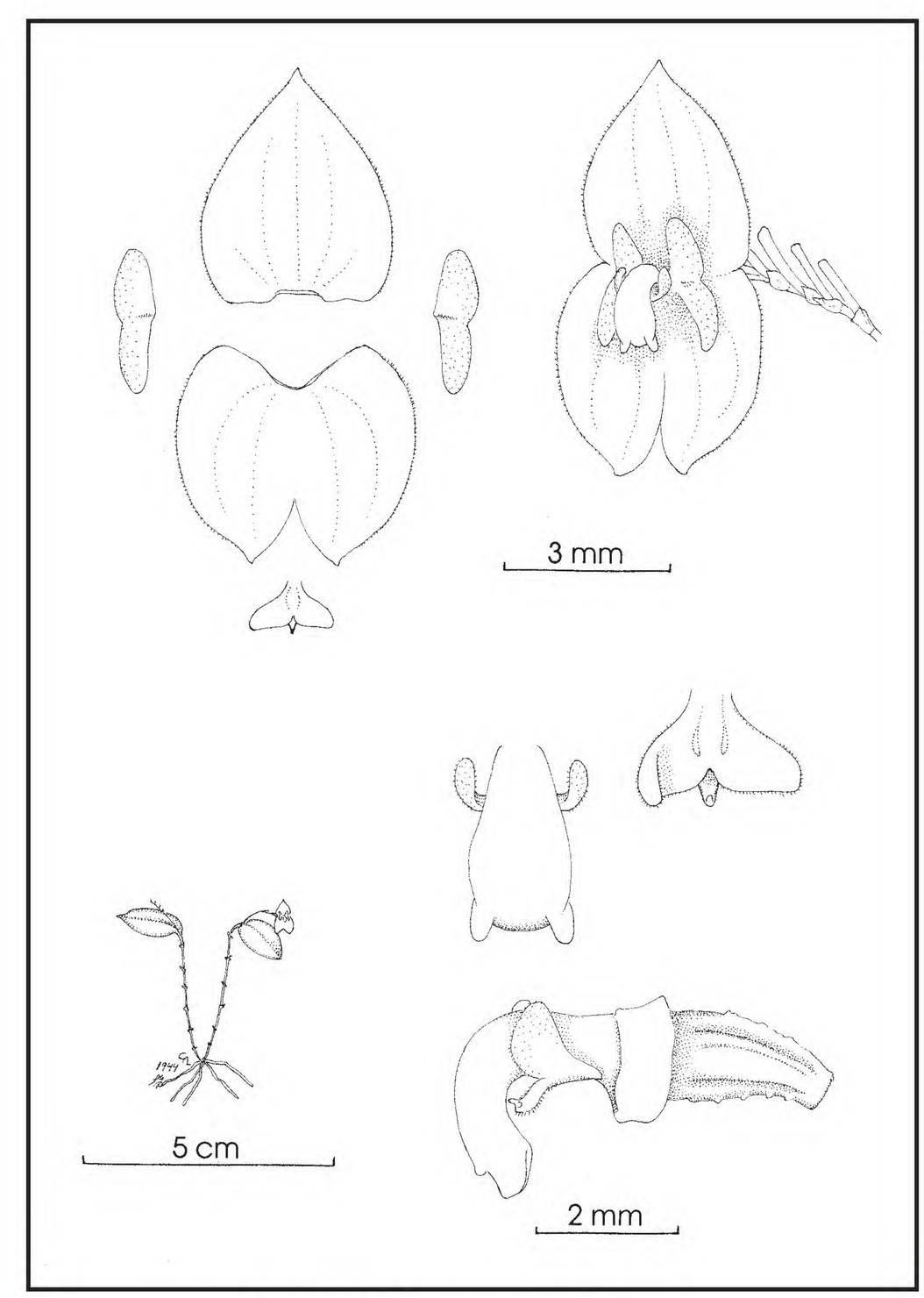


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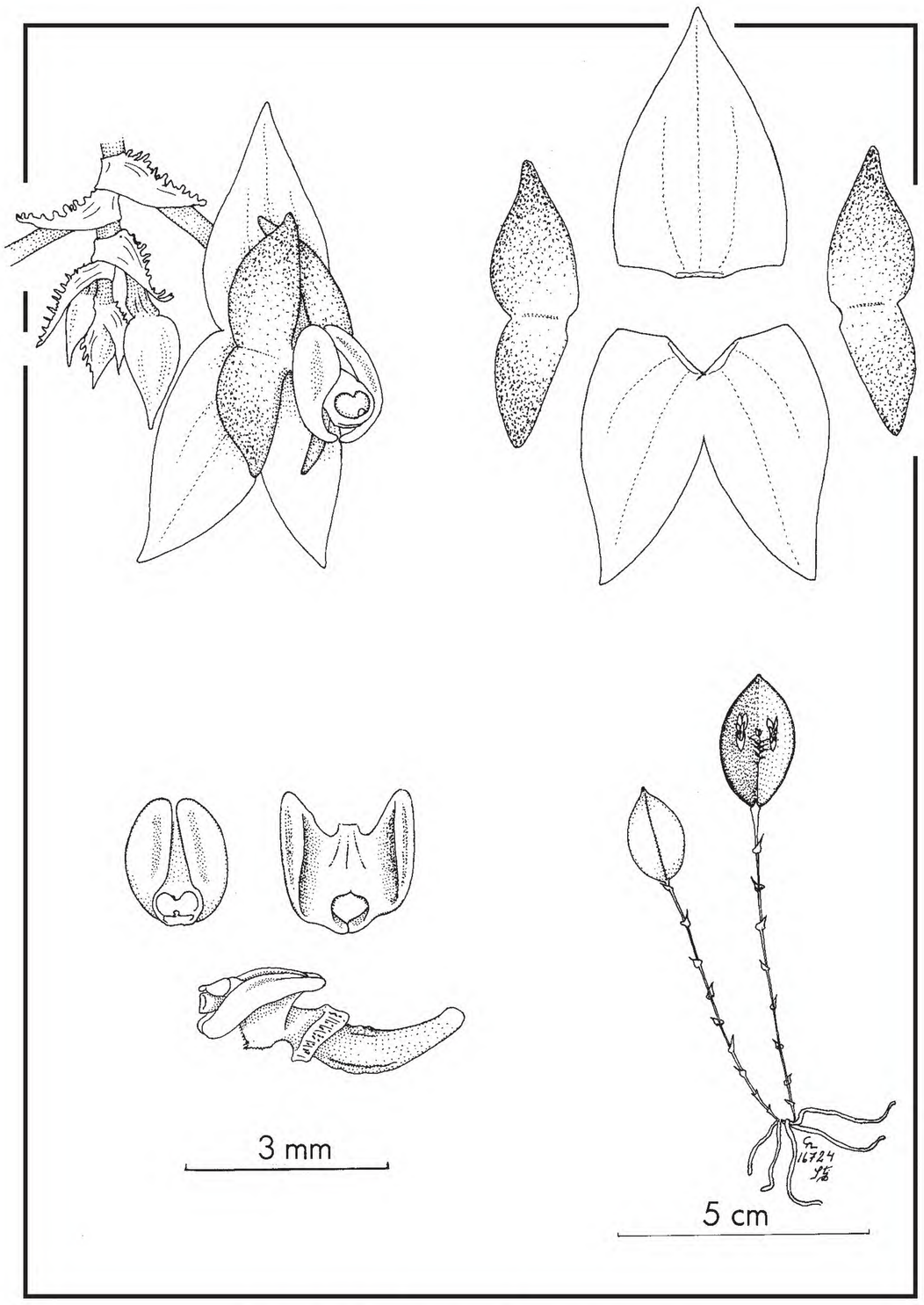


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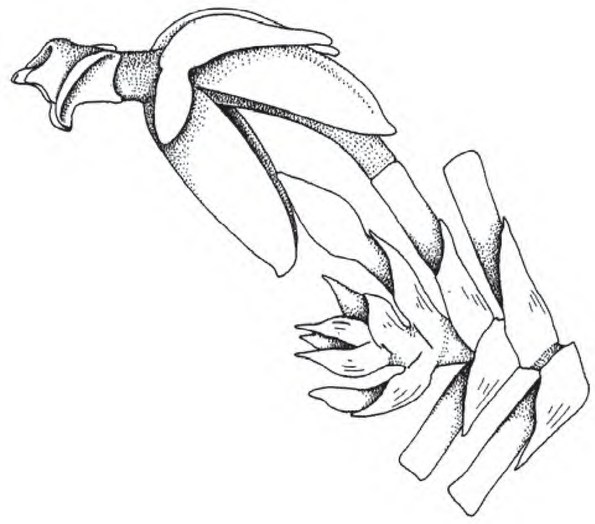

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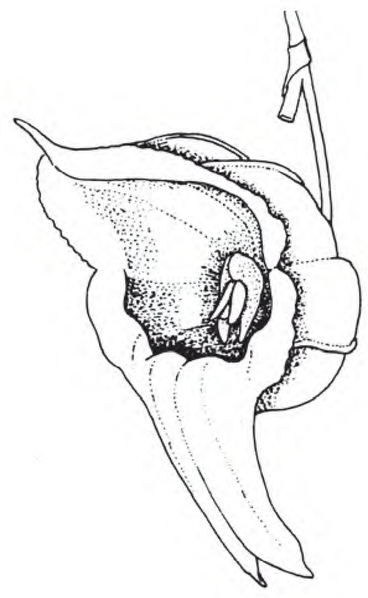

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